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STUDIES OF CENTRAL AMERICAN PLANTS—VII

BY

PAUL C. STANDLEY

CURATOR OF THE HERBARIUM, DEPARTMENT OF BOTANY

AND

JULIAN A. STEYERMARK

ASSISTANT CURATOR OF THE HERBARIUM, DEPARTMENT OF BOTANY

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STUDIES OF CENTRAL AMERICAN PLANTS—VII

PAUL C. STANDLEY AND JULIAN A. STEYERMARK

The present paper consists almost wholly of descriptions of new species of Guatemalan plants. The descriptions and illustrations of four of the new Acanthaceae have been supplied by Mr. Emery C. Leonard of the United States National Museum. The paper includes also the diagnosis of a proposed new genus of Rubiaceae from the mountains of Costa Rica.

CYPERACEAE

Carex huehueteca Standl. & Steyerm., sp. nov.—Planta dense caespitosa, rhizomatibus brevibus crassis, culmis gracilibus erectis 60 cm. altis et ultra, obtuse trigonis, infra nodos purpureo-brunneis, laevibus; foliorum vaginae latae laxae intense purpureo-brunneae; folia numerosa tenuia in sicco pallide viridia, laminis 12–27 cm. longis ca. 8 mm. latis, anguste attenuatis, conspicue costatis, inter nervos inconspicue septatis, planis, marginibus laevibus; spicae paucae vel plures longissime angusteque pedunculatae, ut videtur pendulae, terminalis mascula, laterales femineae vel pro parte androgynae, lineares, plerumque 3–4.5 cm. longae, laxe et subremote floriferae, bracteis filiformibus erectis brevibus basi longe vaginatis, vaginis usque ad 1 cm. longis purpureo-brunneis; glumae pallide brunnescentes vel brunneo-virides oblongo-ovales ca. 2.5 mm. longae, apice abrupte contractae et arista usque ad 5 mm. longa sed vulgo breviore terminatae; perigynia fusiformi-lanceolata viridescentia in sectione compresso-triangularia, manifeste nervata glabra, 3.5 mm. longa 1 mm. lata, in rostrum sensim attenuata; stigmata 3.—Guatemala: Dept. Huehuetenango: Along stream at Cananá, Sierra de los Cuchumatanes, alt. about 2,500 meters, July 18, 1942, *Julian A. Steyermark* 49055 (type in Herb. Field Mus.).

The type specimen is in poor condition for study, being in advanced fruit, but the plant is clearly different from any other species known from Central America or Mexico. Its relationship is with *C. perlonga* Fernald, of southern Mexico and Guatemala. It is noteworthy for its wide leaves, the foliage in general resembling that of *Luzula gigantea*.

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Carex Steyermarkii Standl., sp. nov.—Ut videtur caespitosa, culmis erectis crassiusculis ca. 50 cm. altis striatis laevibus; folia magna lataque numerosa atque conferta, ut videtur erecta usque ad 40 cm. longa, 16–24 mm. lata, plana, crassiuscula, in sicco pallide viridia, supra sublucida, subtus pallidiora, manifeste costata, subulato-acuminata, ad margines laevia, basi dilatata et vaginantia, prope vaginas intense brunneo-rubra; spicae numerosae inflorescentiam majusculam laxam efformantes, longe graciliter pedunculatae, pendulae, androgynae, elongato-lineares, usque ad 6 cm. longae, laxiflorae, floribus infimis saepe remotis; glumae lanceolato-oblongae acutae, inconspicue mucronatae vel muticae, pallide sordide brunnescentes vel pallide viridi-brunneae; perigynia fusiformi-lanceolata, ca. 5 mm. longa, paullo ultra 1 mm. lata, pallide sordido-brunnea, manifeste nervata, lucida, in rostrum brevem crassum erectum sensim angustata, in sectione obtuse triangularia; stigmata 3.—Guatemala: Dept. Huehuetenango: Sierra de los Cuchumatanes, Cerro Huitz, between Barillas and Mimanhuitz, alt. 1,600–2,600 meters, July 14, 1942, *Julian A. Steyermark* 48542 (type in Herb. Field Mus.).

The type specimen consists of a single much-weathered plant, in which it is difficult to determine the true characters of the spikes and the general form of the inflorescence. The species, however, is evidently a distinct one, outstanding because of its extremely broad leaves, among the widest to be found in the genus. It is believed that the relationship is with *C. perlonga* Fernald and *C. huehueteca*, described above.

PALMAE

Chamaedorea aequalis Standl. & Steyerm., sp. nov.—Caudex erectus 3–4.5 m. altus 1.5–2 cm. crassus laevis, internodiis superioribus 11–15 cm. longis; frondis vagina oblique aperta ca. 9 cm. longa prominenter costata; petiolus ca. 19 cm. longus gracilis 3 mm. crassus; lamina 37 cm. longa et 23 cm. lata vel ultra; pinnae in utroque latere 17 vel ultra tenues concolores sublucidae regulariter dispositae, apicales inferioribus non latiores basi connatae anguste lanceolatae, non sigmoideae 13–24 cm. longae 1.5–3 cm. latae, longe aequaliter attenuato-acuminatae, basin angustam versus sensim angustatae, plerumque 3-nerviae, nervis secundariis numerosis primariis fere aequalibus; pedunculus inflorescentiae femineae gracilis adscendens vel suberectus 21–30 cm. longus vix ultra 2 mm. crassus; spathae 4–5 tubulosae imbricatae, intermediis ca. 12 cm. longis,

adpressae ca. 5 mm. diam.; spadicis pars ramosa 10–13 cm. longa et aequilata, ramis ca. 10 erecto-patentibus, infimis furcatis, superioribus simplicibus 9–10.5 cm. longis rubris gracilibus, insertionibus vix excavatis, fructibus in spira laxa insertis remotis; corolla sub fructu explanata, petalis late ovatis ca. 2 mm. longis ecostatis subapiculatis, calyce persistente explanato vix ultra 2 mm. lato, lobis 3 late rotundatis; fructus globosus in sicco 6 mm. diam. basi et apice late rotundatus, semine fere aequilongo pallide griseo-brunneo.—Guatemala: Dept. Huehuetenango: In forest of *Liquidambar* on slopes bordering a moist ravine, Cerro Negro, 2 miles west of Las Palmas, Sierra de los Cuchumatanes, alt. 1,600–2,000 meters, August 31, 1942, *Julian A. Steyermark* 51666 (type in Herb. Field Mus.). Dept. Sololá: Volcán de Atitlán, south-facing slopes, alt. 1,700–3,800 meters, June, 1942, *Steyermark* 47411.

This plant bears some resemblance to *C. Schippii* Burret, which is rather common in the Atlantic slopes and lowlands of Guatemala and British Honduras, but that species has leaves of quite different appearance, their pinnae having only a single secondary nerve between the more prominent primary nerves. *C. aequalis* is a rather small and slender plant. One specimen bears a section of the caudex with two nodes, each of which produces a pistillate spadix. The spadices apparently are borne well below the leaves.

Chamaedorea Aguilariana Standl. & Steyerm., sp. nov.—Caudex gracilis viridis 1–3-metralis ca. 8 mm. crassus conspicue annulatus, internodiis plerumque 1.5–2 cm. longis; vagina 9–10 cm. longa 1–1.5 cm. lata, apice obliqua; petiolus gracilis 12–17 cm. longus; lamina ambitu oblonga, vulgo 30–40 cm. longa, rhachi gracillima; pinnae in quoque latere 4–5 regulariter dispositae alternae, apicales confluentes 18–20 cm. longae vulgo 6–7 cm. latae longe falcato-acuminatae, sequentes breviores et angustiores plerumque 11–19 cm. longae et 2.5–5 cm. latae, anguste falcato-acuminatae, sigmoideae, tenues, subtus paullo pallidiores, ca. 5-nerviae, nervis secundariis singulis primariis multo gracilioribus; spadices in axillis foliorum nascentes, masculorum pedunculo 8–20 cm. longo gracili patente vel recurvo, spathis 3–4 tubulosis tenuibus non arcte adpressis 6–7 mm. diam. apice acutis; spadicis rami vulgo 11–14 in tota longitudine floriferi penduli ca. 12 cm. longi, floribus breviter immersis dense insertis 2.5 mm. altis pallide viridibus, calyce minuto brevissime 3-lobo, lobis latissime rotundatis; petala in sicco fusca leviter striata, apice subcoherentia vel libera, ovali-ovata; antherae oblongae; spadicis feminei pedunculus 22–44 cm. longus gracilis

suberectus, partis ramosae rhachi vix ad 6.5 cm. longa, ramis 5–9 gracilibus subflexuosis 10–17 cm. longis, floribus remote spiraliter insertis, fere ut in spadice masculo, petalis insigniter striato-costulatis, ramis pallide aurantiacis; fructus globosus, immaturus ca. 6 mm. diam., basi et apice rotundatus.—Guatemala: Dept. Quezaltenango: Damp wooded quebrada, along old road between Finca Pirineos and Patzulín, alt. 1,200–1,400 meters, February 9, 1941, *Paul C. Standley* 86890 (type in Herb. Field Mus.); along Río Samalá, between Santa María de Jesús and Calahuaché, 1,200 meters, *Steyermark* 33849; between Finca Pirineos and Finca Soledad, lower southern slopes of Volcán de Santa María, 1,300 meters, *Steyermark* 33505. Dept. San Marcos: Volcán de Tajumulco, above Finca El Porvenir, 1,300–1,500 meters, *Steyermark* 37179; Río Mopá, below Rodeo, 600 meters, *Standley* 68759. Dept. Suchitepéquez: Southwestern slopes of Volcán Zunil, between Finca Montecristo and Finca Asturias, 1,300 meters, *Steyermark* 35278. Dept. Chimaltenango: Near Sibajá, 1,050 meters, *Standley* 62282. Dept. Escuintla: Below Las Lajas, 900–1,200 meters, *Standley* 64814. Dept. Santa Rosa: Near El Molino, 600 meters, *Standley* 78512.

Local names "pacaya" (given to all species of *Chamaedorea*) and "molinillo," the latter in reference to the fact that the base of the stem with the cluster of stiff roots is used for stirring coffee and other hot liquids. This plant, which is rather common along the Pacific bocacosta of Guatemala—the coffee region—is related apparently to *C. pulchra* Burret, which has much larger leaves, their numerous segments much longer and narrower, the terminal ones little if at all broader than those just below them. *C. Aguilariana* bears a superficial resemblance to *C. neurochlamys* Burret, a very different plant, however, with narrow, conspicuously curved fruits, to which O. F. Cook has given (but not technically published) the name *Docanthe alba*. The present species is dedicated to Don José Ignacio Aguilar, formerly Director of the Finca Nacional La Aurora, in the outskirts of Guatemala, to whom we are indebted for a great many favors and for a large amount of information regarding Guatemalan plants, as well as for extensive collections of herbarium specimens that have provided many new department records for the flora of Guatemala.

Chamaedorea brachypoda Standl. & Steyerm., sp. nov.—Caudex gracilis pallide viridis ca. metralis 6–7 mm. crassus, internodiis 6–6.5 cm. longis; folii vagina ca. 6 cm. longa 8 mm. lata tubulosa striato-nervia apice obliqua; petiolus gracilis 9–10 cm.

longus; lamina simplex ca. 25 cm. longa et aequilata basi cuneato-acuta, rhachi ca. 12 cm. longa, nervis primariis utroque latere ca. 13 utrinque prominentibus, nervis secundariis singulis primariis multo tenuioribus, lamina profunde biloba, lobis acutis vel breviter acuminatis angulo recto vel paullo angustiore divergentibus ca. 16 cm. longis et prope basin 10 cm. latis, fere concoloribus; spadices longe infra folia nascentes, pedunculo 3–5 cm. longo gracili sed rigido adscendente; spathae 6 brevissimae, infimis vix ultra 8 mm. longis supremis usque ad 2.5 cm. longis, 4 mm. diam. apice acutis vel acuminatis; spadicis masculi rami 5–6 gracillimi laxiflori 9–10.5 cm. longi, floribus vix subimmersis pallide luteis; calyx vix 2 mm. latus brevissime 3-lobus vel subinteger sub flore explanatus; petala libera 2.5–3 mm. longa ovato-ovalia incurva et apice conniventia; antherae ovales breves; pistillodium columnare apice anguste disciformi-dilatatum; spadix femineus masculo similis (bene evolutus non visus), ramis 5–6 et 5–6 cm. longis.—Guatemala: Dept. Izabal: Wet forest, between Bananera and La Presa, base of Sierra del Mico, alt. 150 meters or lower, April 9, 1940, *Julian A. Steyermark* 39185 (type in Herb. Field Mus.); between Virginia and Lago de Izabal, 100 meters or lower, April 4, 1940, *Steyermark* 38749.

Local name "pacaya." This is a close relative of *C. Ernesti-Augusti* Wendland, but in that species the peduncles are mostly 20–25 cm. long, and the pistillate inflorescences are simple, the flower-bearing portion much shorter than the peduncle.

Chamaedorea carchensis Standl. & Steyerm., sp. nov.—Planta acaulis; folia magna, vagina indurata 12 cm. longa fere 2 cm. crassa superne angustata; petiolus 1 m. longus vel paullo ultra anguste sulcatus fere 1 cm. crassus; pinnae subaequales regulariter insertae alternantes utroque latere ca. 15 lineari-lanceolatae, terminales vix latiores vel in foliis juvenilibus sequentibus duplo latioribus, pinnis medialibus ca. 40 cm. longis et 3.5 cm. latis rectis aequaliter attenuato-acuminatis, basin versus sensim angustatis, basi ipsa 10–15 mm. lata paullo indurata, pinnis conspicue 1-nerviis, nervis 2 teneris submarginalibus percursis, nervis intermediis tenerrimis inconspicuis; inflorescentiae femineae radicales vel saltem e basi plantae nascentes erectae, pedunculo 34–50 cm. longo crassiusculo apicem versus 4 mm. crasso; spathae 6 imbricatae adpressae ca. 8–10 mm. diam., infimae 3.5 cm. tantum longae, supremae ca. 12 cm. longae apice obliquae, obtusae submucronatae dense striato-nerviae; spadicis feminei pars ramosa 20–26 cm. longa 7–8 cm. lata, rhachi crassiuscula 14–18 cm. longa, ramis 18–25 crassiusculis

viridibus arcuato-erectis sparsifloris; flores vix immersi, alveolis 1–1.2 mm. longis orbicularibus vel late ovalibus; calyx ca. 2 mm. latus incrassatus 3-lobus, lobis rotundo-ovatis obtusissimis; petala 2.5 mm. longa rotundo-ovata obtusa in statu fructifero incrassata; fructus juvenilis vix 5 mm. longus ovalis vel late oblongus apice rotundatus.—Guatemala: Dept. Alta Verapaz: Wet rocky forest along banks of Río Carchá, between Cobán and San Pedro Carchá, alt. about 1,350 meters, March, 1941, *Paul C. Standley* 90160 (type in Herb. Field Mus.); also (juvenile plants) nos. 90161 and 90163.

We are unable to suggest a relationship for this species, which is marked by large leaves with numerous narrow straight pinnae, and especially by the form of the pistillate inflorescence, which arises from the base of the plant and has numerous, almost erect, rather stout branches. The very young plants have simple, deeply bifid leaves. The species grows in the dense, wet, very rich forest along the Río Carchá, one of the few places close to Cobán where one may form some idea of the original forest covering of this part of Guatemala, now so generally denuded for agricultural purposes.

Chamaedorea digitata Standl. & Steyerm., sp. nov.—Caudex gracilis viridis erectus usque ad 1 m. altus, 5–7 mm. diam., internodiis inaequalibus brevibus vel aliquanto elongatis; folia inter minora, vagina 16–21 cm. longa tubulosa apice obliqua 6–13 mm. crassa prominenter costato-nervia, vaginis interdum 8 cm. tantum longis, petiolo gracili vulgo 3–6 cm. longo, laminis plerumque 17–28 cm. longis; pinnae regulariter dispositae utroque latere 5–7 tenues subtus paullo pallidiores lanceolatae vel late lanceolatae sigmoideae 6–11 cm. longae 2.5–3 cm. latae, anguste attenuato-acuminatae, basin versus angustatae 4–6-nerviae, nervis primariis gracillimis sed prominentibus, secondariis inter paria primariorum pluribus tenerrimis; inflorescentiae radicales in plantis acaulescentibus vel in elatioribus infra folia nascentes, pedunculo gracillimo 18–30 cm. longo 1.5 mm. crasso; spathae 4–5 tubulosae brunnescentes striato-nerviae 3–4 mm. diam. apice subacutae adpressae; rhachis spadicis masculi fere nulla 5–6 mm. tantum longa, ramis (in planta unica visa) 4 gracilibus remotifloris 7.5–9 cm. longis, floribus paullo immersis depresso-globosis, calyce 1.7 mm. lato, brevissime lobato, lobis truncatis; petala rotundo-ovata obtusa ecostata valvata; spadix femineus parvus, ramis 3–6 crassiusculis arcuato-erectis 3.5–6.5 cm. longis remotifloris, floribus breviter immersis, alveolis oblongis vel ovalibus 1.5 mm. longis; calyx brevissime trilobus 2.5 mm. latus, petalis ovato-rotundis saepe latioribus quam longis,

paullo ultra 2 mm. longis dorso subtrinerviis; fructus immaturus 5–6 mm. longus subglobosus vel ovali-globosus, basi et apice rotundatus. —Guatemala: Dept. Huehuetenango: In *Liquidambar* forest on slopes bordering a moist ravine, Cerro Negro, 2 miles east of Las Palmas, Sierra de los Cuchumatanes, alt. 1,600–2,000 meters, August 31, 1942, *Julian A. Steyermark* 51683 (type in Herb. Field Mus.). Dept. San Marcos: Volcán de Tajumulco, above Finca El Porvenir, 1,400–1,700 meters, *Steyermark* 37386. Dept. Sololá: Southern slopes of Volcán de Atitlán, 1,700–3,800 meters, *Steyermark* 47383. Dept. El Progreso: Sierra de las Minas, hills north of Finca Piamonte, toward summit of Volcán de Santa Luisa, 2,400–3,000 meters, *Steyermark* 43493. Dept. Alta Verapaz: Dense wet forest, mountains along road between Tactic and the divide on the road to Tamahú, 1,600 meters, *Standley* 91426.

A small and neat plant, notable for its short and broad sigmoid pinnae with very long and narrow tips, also for the very small pistillate inflorescence, with few branches.

Chamaedorea fusca Standl. & Steyerm., sp. nov.—Palma elata erecta 1.5–3 m. alta, caudice 1–1.5 cm. crasso, internodiis inaequalibus 4–15 cm. longis; folia majuscula, vagina ca. 20 cm. longa apice obliqua prominenter costata; petiolus ca. 35 cm. longus crassiusculus usque ad 7 mm. crassus; pinnae crassiusculae regulariter insertae alternantes vel interdum subopppositae subtus paullo pallidiores in utroque latere 5–7, rhombeo-lanceolatae vel late lanceolatae sigmoideae, medianae 22–35 cm. longae 3.5–10 cm. latae, longe angusteque caudato-acuminatae vel attenuato-acuminatae, basin versus sensim angustatae, basi ipsa usque 1.5 cm. lata, plerumque 5-nerviae, nervis primariis prominentibus, secundariis multo tenuioribus numerosis, pinnis terminalibus sequentibus brevioribus et vulgo angustioribus; inflorescentiae femineae infra folia nascentes in sicco fere nigrae, pedunculo 20–27 cm. longo apicem versus 4 mm. crasso, rhachi 10–19 cm. longa; spadicis feminei rami simplices vel infimi furcati, 23 vel pauciores, arcuati et patentes vel adscendentes crassiusculi laxiflori, in vivo virides in sicco nigrescentes; flores laxe inserti vix immersi, alveolis suborbicularibus fere 2 mm. longis, in sicco nigrescentes; spathae vulgo 5, infimae 2–3 cm. longae, superiores ca. 10 cm. longae, tubulosae 6–9 mm. diam., striato-nerviae apice obliquae; calyx 2.5 mm. latus breviter trilobus, lobis late rotundatis; petala crassa enervia 2 mm. longa rotundo-ovata obtusissima; fructus ellipsoideus in sicco 10 mm. longus 6–7 mm. latus fere symmetricus apice basique paullo angustatus; semen

immaturum ellipsoideum 7 mm. longum 4 mm. latum.—Guatemala: Dept. Izabal: Between Bananera and La Presa, Sierra del Mico, alt. 300 meters or lower, March 28, 1940, *Julian A. Steyermark* 38123 (type in Herb. Field Mus.). Dept. Alta Verapaz: Vicinity of Cubilgüitz, alt. 300–350 meters, *Steyermark* 44380.—Mexico: Monterrey, Campeche, January, 1932, *C. L. Lundell* 1235.

Outstanding characters of this *Chamaedorea* are the rather large leaves with very broad pinnae whose form reminds one almost of some species of *Zamia*, and the very large pistillate spadices, whose numerous, rather widely spreading branches are blackish in the dry state. The fruits, also, are noteworthy for their elongate form, those of the majority of local species being globose or nearly so.

Chamaedorea nubium Standl. & Steyerm., sp. nov.—Caudex gracilis erectus 1.5–2.5 m. altus 8–10 mm. crassus, internodiis supremis brevibus, inferioribus usque 9.5 cm. longis; folia simplicia, vagina ca. 30 cm. longa tubulosa apice obliqua laxe adpressa ca. 13 mm. diam., striato-nervia, petiolo gracili 19 cm. longo; lamina ca. 45 cm. longa profunde bifida, rhachi ca. 15 cm. longa, segmentis latere superiore 33 cm. longis falcato-acuminatis integris vel subintegris, nervis primariis utroque latere ca. 14 prominentibus, secundariis obscuris, basi laminae cuneato-acuta; pedunculi spadicis feminei recurvi 25–27 cm. longi apicem versus 2.5 mm. crassi, spathis (bene evolutis non visis) anguste tubulosis striato-nerviis 3–4 mm. crassis apice acutis adpressis; spadix fructifer ca. 15 cm. longus, rhachi 4 cm. longa vel interdum magis elongata, ramis 5 vel ultra crassiusculis aliquanto undulatis usque ad 10.5 cm. longis adscendentibus vel suberectis spiraliter laxifloris, aurantiacis, floribus subimmersis, alveolis ca. 2.5 mm. longis; calyx brevissimus brevissime 3-lobus, lobis latissimis subtruncatis; petala in statu fructifero incrassata semiorbicularia apice rotundata latiora quam longa 2.5 mm. longa; fructus late ovalis vel obovoideo-ovalis ca. 10 mm. longus et 7 mm. latus basi et apice rotundatus.—Guatemala: Dept. El Progreso: Sierra de las Minas, hills north of Finca Piamonte, toward the summit of Volcán de Santa Luisa, in cloud forest, alt. about 2,900 meters, February 5, 1942, *Julian A. Steyermark* 43583a (type in Herb. Field Mus.). Dept. Huehuetenango: Sierra de los Cuchumatanes, Cerro Huitz, between Mimanhuitz and Yulhuitz, alt. 1,500–2,600 meters, *Steyermark* 48612.

The second collection cited is in poor condition but probably referable here. This is a relative of *C. Ernesti-Augusti* Wendland, but that species has simple pistillate spadices.

Chamaedorea Pachecoana Standl. & Steyerm., sp. nov.—Palma nana vix ultra 60 cm. alta, acaulis vel subacaulis, caudice vix ad 8 cm. longo, ca. 7 mm. diam., densissime annulato, internodiis vix ad 6 mm. longis; folia parva pinnatisecta plerumque 30–36 cm. longa et 8–13 cm. lata, vagina ca. 5 cm. longa usque ad basin fissa laxa striato-nervia, petiolo gracillimo 7–17 cm. longo; pinnae tenues late rhombeo-lanceolatae vel oblongo-lanceolatae 4.5–8 cm. longae 1.5–2 cm. latae vel interdum paullo majores, longe angusteque falcato-acuminatae, sigmoideae, basi arcuato-cuneatae, basi ipsa angusta, regulariter dispositae alternae vel suboppositae, terminales coalitae, interdum sequentibus paullo longiores et latiores, omnes 3-nerviae, nervis secundariis numerosis inconspicuis; pedunculi gracillimi plerumque 11–23 cm. longi supra vix ultra 1 mm. crassi; spathae 5–6 angustissime tubulosae vix 2 mm. diam. arcte adpressae, superiores 5–7.5 cm. longae apice obliquae; spadix masculus 7–11 cm. longus, rhachi brevissima, ramis 2–5 usque ad basin densifloris, floribus plurimis viridescenti-luteis subimmersis 3 mm. longis, calyce 2.5 mm. lato breviter trilobo; petala valvata apice incurva late ovata obtusa enervia, antheris oblongo-ovatis obtusis; spadix femineus simplex et 5–10 cm. longus vel saepe furcatus et aequilongus, ramis sparse paucifloris, crassiusculis rectis, floribus spiraliter dispositis subimmersis, rhachi rubra vel aurantiaca; calyx 2 mm. latus breviter trilobus, lobis late rotundatis; petala rotundo-ovata 2 mm. longa obtusissima leviter striato-nervia; fructus maturus niger globosus vel ovali-globosus 6–8 mm. longus basi et apice rotundatus symmetricus.—Guatemala: Dept. Guatemala: Cultivated in the garden of Don Mariano Pacheco Herrarte, Guatemala; said to come from Dept. Totonicapán, but probably from some other part of the Occidente; January 20, 1939, *Paul C. Standley* 63104 (type in Herb. Field Mus.). Dept. Quezaltenango: Along old road between Finca Pirineos and Patzulín, alt. 1,200–1,400 meters, *Standley* 86596, 86654, 86804, 86924, 87030, 87027, 87009, 87017, 87011, 87030; Finca Pirineos, below Santa María de Jesús, 1,350 meters, *Standley* 68198; Quebrada San Gerónimo, Finca Pirineos, 1,300–2,000 meters, *Steyermark* 33333.

Local name "pacaya." This is easily the smallest of all the known palms of Guatemala, and one of the most attractive. Although *C. elegans* Mart. blooms when even smaller, it soon attains a much greater size, becoming 2 meters high or more. For pot culture *C. elegans* is probably more desirable, since it is more slender and graceful, but *C. Pachecoana* is a much more leafy and denser plant, and probably would not soon become lank and ungainly, as *C. elegans*

does after a short period of cultivation in pots. The plant here described is well known in Guatemala, and occasionally is seen in pots about patios. It is common in the moist forest of the lower reaches of the Samalá Valley. It is somewhat surprising that it was not found long ago by some of the collectors in search of palms for introduction into Europe, but it does not closely resemble any Mexican palm of which we have seen a representation. Rather strangely, the Guatemalan Chamaedoreas have all, so far as they are localized, with one exception, been described from the Cobán region, and one dependent upon literature alone would be justified in supposing that Chamaedoreas were not found in other parts of the country. As a matter of fact, they are quite as plentiful, if not more so, in the forests of the Pacific slope, especially in the areas devoted to coffee culture.

Chamaedorea quezalteca Standl. & Steyerm., sp. nov.—Palma gracilis ca. 1.5 m. alta, caudice fere 1 cm. diam. lucido, internodiis 1.5–3 cm. longis; vagina ca. 17.5 cm. longa tubulosa fere 1.5 cm. crassa tenuiter striato-nervia, petiolo gracili elongato 2.5 mm. crasso; folia pinnatisecta, pinnis utroque latere ca. 16 regulariter dispositis alternantibus tenuibus utrinque intense viridibus, lineari-lanceolatis vix vel non sigmoideis, majoribus medialibus ca. 19 cm. longis et 2 cm. latis longe attenuato-acuminatis, basin versus sensim angustatis, plerumque 5-nerviis, nervis secundariis tenerrimis obscuris, vel 3-nerviis cum nervo secundario singulo prominente interposito, superioribus 9 cm. tantum longis et vix 1 cm. latis; pedunculus gracillimus usque ad 25 cm. longus apice 1.5 mm. crassus, spathis (perfectis non visis) 3 mm. crassis tubulosis apice obliquis; spadix femineus simplex ca. 8 cm. longus spiraliter laxeque pauciflorus, rhachi gracillima subflexuosa, floribus distantibus non immersis, alveolis late ovalibus ca. 1.5 mm. longis; calyx sub fructu explanatus 2.5 mm. latus breviter trilobus, lobis late rotundatis vel subtruncatis; petala in statu fructifero incrassata explanata ovato-rotundata vel latissime ovata, interdum latiora quam longa, ca. 3 mm. longa interdum 4 mm. lata, apice late rotundata enervia; fructus immaturus subglobosus symmetricus ca. 6 mm. diam. basi et apice late rotundatus.—Guatemala: Dept. Quezaltenango: Dense damp mixed mountain forest, along old road between Finca Pirineos and Patzulín, alt. 1,200–1,400 meters, February 9, 1941, *Paul C. Standley* 87159 (type in Herb. Field Mus.).

Apparently this is a rare plant, since we have made only one collection of it. It is related to *C. adscendens* (Dammer) Burret,

which is confined to the Atlantic watershed of Guatemala, and has numerous, evident and somewhat prominent secondary nerves between the primary nerves of the leaflets.

Chamaedorea Rojasiana Standl. & Steyerm., sp. nov.—Palma gracilis erecta interdum acaulis, vulgo 1–1.5 m. alta, caudice 6–8 mm. crasso, internodiis 5.5–7 cm. longis vel interdum multo brevioribus; vagina 7–12 cm. longa 8–14 mm. crassa apice obliqua prominenter striato-nervia, petiolo gracili 5–20 cm. longo; folia inter minora pinnatisecta, pinnis tenuibus fere concoloribus vel subtus paullo pallidioribus, utroque latere 2–4 regulariter dispositis insigniter sigmoideis, terminalibus 2 coalitis 19–25 cm. longis 5.5–7 cm. latis, sequentibus brevioribus ca. 3 cm. latis, infimis ca. 8 cm. longis atque 2 cm. latis, omnibus falcato-acuminatis, terminalibus 7–8-nerviis, inferioribus plerumque 3-nerviis, nervis secondariis paucis tenuibus; pedunculi 11–20 cm. longi gracillimi, apice vix 2 mm. crassi, adscendentes vel patentes; spathae 3–4 anguste tubulosae adpressae vix ultra 3 mm. crassae striato-nerviae; spadix masculus simplex vel saepe e ramis 2–3 compositus, ramis usque ad basin densifloris 10–14.5 cm. longis 4 mm. crassis, floribus sat profunde immersis, calyce 2.5 mm. lato fere truncato obscure trilobo; petala apice valvata striato-nervia ca. 2 mm. longa; spadix femineus simplex vel e ramis 2 compositus, ramis aurantiacis 7–9 cm. longis remote spiraliter subpaucifloris, floribus profunde immersis, alveolis oblongis vel ovalibus 2.5 mm. longis, calyce brevissimo obscure trilobo; petala irregulare rotundata prominenter striato-nervia; fructus primo aurantiacus maturitate purpureo-niger subglobosus vel ovali-ellipsoideus in sicco 7–9 mm. longus, basi et apice rotundatus.—Guatemala: Dept. Quezaltenango: On forested banks, Quebrada San Gerónimo, Finca Pirineos, lower southern slopes of Volcán de Santa María, between Santa María de Jesús and Calahuaché, alt. 1,300–2,000 meters, January 1–2, 1940, *Julian A. Steyermark* 33479 (type in Herb. Field Mus.); between Finca Pirineos and Patzulín, alt. 1,300–1,500 meters, *Steyermark* 33649; along old road between Finca Pirineos and Patzulín, alt. 1,200–1,400 meters, *Standley* 86937, 86933, 86947, and 86713; Finca Pirineos, alt. 1,350 meters, *Standley* 68187, 68308, 68340. Dept. San Marcos: Volcán de Tajumulco, Finca El Porvenir, alt. 1,300–1,500 meters, *Steyermark* 37526, 37527; Cerro de Mono above Finca El Porvenir, alt. 1,400–1,700 meters, *Steyermark* 37387; Loma Trocodoná, Finca El Porvenir, *Steyermark* 37527. Dept. Huehuetenango: Sierra de los Cuchumatanes, near Maxbal, alt. 1,500 meters, *Steyermark* 48856. Dept. Sololá: Northern slopes of Volcán

de Atitlán, alt. 2,600 meters, *Steyermark* 47355. Dept. Suchitepéquez: Southwestern slopes of Volcán de Zunil, alt. 1,200 meters, *Steyermark* 35247, 35248.

Known locally as "pacaya," or sometimes "molinillo." Related, apparently, to *C. oreophila* Mart., of southern Mexico, because of the form of the inflorescences. That species has much more numerous leaf segments, the middle ones being relatively much narrower. *C. Rojasiana* is named for Professor Ulises Rojas, Director of the Jardín Botánico of Guatemala, on and near whose finca, Pirineos, many of the specimens were collected.

Chamaedorea Skutchii Standl. & Steyerm., sp. nov.—Caudex gracilis 2.5 m. altus ca. 8 mm. crassus, internodiis 2.5–3 cm. longis; petiolus 22 cm. longus vel paullo ultra, lamina pinnatisecta; pinnae utroque latere 8, tenues, subtus paullo pallidiores, terminales 27 cm. longae et fere 8 cm. latae, falcato-acuminatae, latere exteriore inconspicue crenato-serratae, 7-nerviae, sequentes approximatae regulariter dispositae alternantes 15–21 cm. longae 13–16 mm. latae non sigmoideae subfalcate longiattenuatae 3-nerviae, nervis secundariis tenerrimis; inflorescentia feminea infra folia nascens, pedunculo gracili ca. 21 cm. longo apice fere 4 mm. crasso; spadix ca. 14 cm. longus, rhachi ca. 3 cm. longa, ramis 7 simplicibus crassis aurantiacis spiraliter remoteque floriferis, floribus breviter immersis, alveolis ovalibus 2.5 mm. longis; calyx ca. 3 mm. latus brevissime trilobus, lobis late rotundatis; petala 2.5 mm. longa in statu fructifero incrassata ovato-rotundata sub fructu explanata; fructus niger ovali-globosus in sicco 10 mm. longus 8 mm. latus symmetricus basi et apice rotundatus; semen ovali-globosum 8 mm. longum.—Guatemala: Dept. Quezaltenango: Volcán de Zunil, alt. 2,400 meters, August 4, 1934, *Alexander F. Skutch* 935 (type in Herb. Field Mus.).

According to the collector, the plants bear usually 4 or 5 leaves. The plant is probably a local or rare one, since it has not appeared among the numerous palm collections made in the same general region. It has no particularly outstanding characters, although the broad uppermost pinnae are rather distinctive, and this particular combination of fruit and leaf characters is not matched in any other Guatemalan species of the genus.

Chamaedorea stenocarpa Standl. & Steyerm., sp. nov.—Planta acaulis nana ca. 60 cm. alta; folia 5 vel plura, 60 cm. longa vel breviora, vagina 4–4.5 cm. tantum longa sursum angustata striatonervia, petiolo gracili 12–20 cm. longo, rhachi 14–27 cm. longa

anguste marginata, lamina pinnatisecta 14–32 cm. longa 10–20 cm. lata; pinnae tenues concolores utroque latere 10–14 regulariter dispositae anguste oblongo-lanceolatae aliquanto sigmoideae, mediales 5.5–12 cm. longae 1.2–2.5 cm. latae, attenuato-acuminatae, basin versus angustatae, basi ipsa ca. 8 mm. lata, 3-nerviae, nervis primariis tenuibus prominentibus, secundariis inter paria singulis tenerrimis et inconspicuis; pinnae terminales 5–7.5 cm. longae 8–15 mm. latae 2–3-nerviae; pedunculus femineus gracilis erectus 18 cm. longus apice 1.5 mm. crassus; spathae 3 vel ultra anguste tubulosae fere 3 mm. diam. arcte adpressae apice obliquae prominenter nervosae; spadix crassiusculus rectus 4 cm. longus intense aurantiacus, subdensiflorus, floribus vix immersis spiraliter insertis, alveolis ellipticis 1.8 mm. longis; calyx minutus brevissime trilobus; petala enervia fere 3 mm. longa rotundo-ovata obtusa; fructus immaturus oblongus in sicco 8 mm. longus 4 mm. latus apice obtusus vel rotundatus, basi obtusus.—Guatemala: Dept. Izabal: Dense wet forest, Cerro San Gil, alt. 650–900 meters, December 25, 1941, *Julian A. Steyermark* 41893 (type in Herb. Field Mus.).

One of the smallest of Guatemalan palms, noteworthy for the numerous, very thin, deep green pinnae, distinctly sigmoid in outline, and the very short, simple spadix, bearing numerous oblong fruits.

Chamaedorea stricta Standl. & Steyerm., sp. nov.—Planta acaulis; folia vulgo 2–3 erecta subrigida concoloria vel subtus paullo pallidiora, vagina 8–27 cm. longa sursum attenuata striato-nervia sublaxa, petiolo 28–35 cm. longo usque ad 7 mm. crasso; lamina 26–60 cm. longa 13–23 cm. lata, basi cuneato-angustata, apice profunde bifida, rhachi 14–30 cm. longa, lobis longe acuminatis fere erectis, nervis primariis utroque latere 12–14 prominentibus, nervis secundariis numerosis tenerrimis inconspicuis; pedunculus radicalis erectus gracilis sed subrigidus 80–100 cm. longus, apice 2 mm. diam.; spathae 7–9 anguste tubulosae, arcte adpressae, pallide virides tenerrime nervosae, infimae 7 cm. tantum longae, mediales 11–28 cm. longae ca. 4 mm. diam. apice acuto obliquae; spadix masculus ca. 24 cm. longus, rhachi ca. 3.5 cm. longa, ramis 7 fere ad basin densifloris gracilibus et subflexuosis, floribus sat profunde immersis, alveolis anguste ellipticis 2.5 mm. longis; calyx brevissimus 2.5 mm. latus brevissime trilobus; petala enervia libera late ovata obtusa fere 4 mm. longa erecta; spadicis feminei rami 3–4 erecti crassiusculi 8–14.5 cm. longi, floribus remote spiraliter insertis, rhachi 1.5–3 cm. longa, rubro-aurantiaca, floribus vix immersis, alveolis ellipticis vel ovalibus 2.5 mm. longis; calyx 3.5 mm. longus sub fructu explanatus

brevissime trilobus; petala enervia fere orbicularia subapiculata ca. 3 mm. longa et aequilata; fructus subglobosus 8 mm. longus et fere aequilatus basi et apice late rotundatus; semen globosum albido-brunneum fructu vix minus.—Guatemala: Dept. San Marcos: Volcán de Tajumulco, on narrow dry ridge above Finca El Porvenir, up Cerro de Mono, alt. 1,400–1,700 meters, March 9, 1940, *Julian A. Steyermark* 37381 (type in Herb. Field Mus.); above Finca El Porvenir, between Todos Santos Chiquitos and Loma de la Paloma, alt. 1,400–1,700 meters, *Steyermark* 37252.

Among the few species with simple leaves, this is outstanding in the greatly elongate, stiffly erect, radical inflorescences. In the genus *Chamaedorea* such elongation of the peduncles is very unusual and when they are much elongate, they usually are spreading or even pendent.

Chamaedorea vulgata Standl. & Steyerm., sp. nov.—Palma elata, erecta, caudice vulgo 1.5–4.5 m. alto 1–2 cm. crasso viridi conspicue annulato, internodiis 4–6.5 cm. longis; folia magna pinnatisecta, vagina ca. 26 cm. longa atque 1–1.5 cm. crassa adpressa striato-nervia, petiolo ca. 55 cm. longo recto 7–9 mm. crasso; pinnae utroque latere ca. 24 regulariter dispositae alternantes tenues intense virides concolores lanceolato-lineares, 27–55 cm. longae 3–7 cm. latae, non sigmoideae, longe attenuato-acuminatae, basin versus sensim angustatae, basi ipsa 6–22 mm. lata, prominenter 5-nerviae, nervis secundariis elevatis sed primariis tenuioribus numerosis, pinnis superioribus sensim decrescentibus, terminalibus interdum 9.5 cm. tantum longis sed vulgo multo longioribus, inferioribus aequilatis, infimis medialibus aliquanto brevioribus; inflorescentiae infra folia nascentes, pedunculis crassiusculis patentibus vel pendulis, interdum adscendentibus, 25–50 cm. longis superne 2–4 mm. crassis; spathae 4–5 tubulosae subadpressae, 6–12 mm. latae, infimae 2.5 cm. longae, supremae 6–21 cm. longae acutae apice obliquae, prominenter striato-nerviae; spadicis masculi rhachis 1–2 cm. tantum longa, ramis 3–9 gracilibus 15–20 cm. longis sat dense vel inferne sublaxe fere ad basin multifloris, ut videtur pendulis, floribus vix immersis, alveolis ovalibus fere 2 mm. longis; calyx 2.5–3 mm. latus brevissime trilobus, lobis latissime rotundatis; petala viridia enervia crassiuscula late ovata obtusa ca. 3 mm. longa libera; spadicis feminei rhachis crassa ca. 4 cm. vel usque ad 12 cm. longa, ramis 6 vel interdum usque 15 gracilibus aurantiacis, adscendentibus vel praesertim in statu fructifero pendulis, interdum flexuosis, alveolis late ovalibus vel suborbicularibus; calyx sub fructu explanatus brevissime trilobus;

petala enervia late ovato-rotundata in statu fructifero ca. 4 mm. lata et fere aequilonga apiculata; fructus globosus symmetricus 9 mm. longus et aequilatus basi et apice late rotundatus; semen globosum.—Guatemala: Dept. San Marcos: In forest, Volcán de Tajumulco, between Finca El Porvenir and Loma Corona, 9 miles northwest of El Porvenir, alt. 1,300–2,000 meters, March 14, 1940, *Julian A. Steyermark* 37735 (7 sheets; type in Herb. Field Mus.); Volcán de Tacaná, between Canjulá and La Unión Juárez, alt. 2,000 meters or higher, *Steyermark* 36455. Dept. Quezaltenango: Between Finca Pirineos and Finca Soledad, lower southern slopes of Volcán de Santa María, 1,300 meters, *Steyermark* 33514, 33518; Fuentes Georginas, western slope of Volcán de Zunil, 2,850 meters, *Standley* 67344. Dept. Huehuetenango: Sierra de los Cuchumatanes, near Maxbal, alt. 1,500 meters, *Steyermark* 48737; Sierra de los Cuchumatanes, Cerro Cananá, between Nucapuxlac and Cananá, alt. 2,500 meters, *Steyermark* 49018. Dept. Suchitepéquez: Volcán de Santa Clara, between Finca Naranjo and the upper slopes, alt. 1,300 meters or higher, *Steyermark* 46673.

Local names are "pacaya," "cum" (in San Marcos), "pacaya chiquita," "pacaya de montaña," and "bojón." The range of the species is apparently somewhat wider than is indicated by the specimens cited. This is a most unsatisfactory plant to name, and perhaps a new name for it is unnecessary, but we have not been able to identify it with any other Guatemalan species or with any of those recorded for Mexico. The relationship is obviously with *C. Tepejilote* Liebm., a common Guatemalan species distinguished by its oval or oblong fruits, and often by its much greater size, although many of the wild plants of *C. Tepejilote* are no larger than those of *C. vulgata*. It is possible, further, that two species really are represented by the collections here referred to *C. vulgata*, but this can not be decided until a larger number of collections is available for study. As here treated, *C. vulgata* is one of the most common small palms of the mountains of the Occidente of Guatemala.

ARACEAE

Anthurium Coibionii Standl. & Steyerm., sp. nov.—Subacaulescens, caudice brevissimo fere 2 cm. crasso; petioli crassi 13–35 cm. longi 4–7 mm. crassi ca. 1 cm. infra apicem geniculati, geniculo longiore quam crasso; lamina in sicco coriacea, in vivo crassa atque carnosa, oblongo-lanceolata, 30–60 cm. longa 8–14 cm. lata, e basi ad apicem acutum longiattenuata, basi truncata vel

truncato-rotundata, manifeste 3-nervia, supra viridis, nervis manifestis, subtus pallidior et glaucescens, costa crassissima elevata, nervis primariis lateralibus numerosis angulo angusto adscendentibus maxime elevatis, nervis intermediis venisque prominentibus laxe reticulatis; pedunculi ca. 35 cm. longi graciles vel crassi; spatha oblongo-lanceolata brunneo-viridis 7.5 cm. longa et 2 cm. lata vel brevior, obtusa atque cuspidata, basi valde amplexicaulis; spadix crasse 1.5 cm. longe stipitatus caudiformis, 5–12 cm. longus 6–9 mm. crassus, obtusus, sursum vix attenuatus, brunneo-purpurascens; ovaria subglobosa apice rotundata vel truncata.—Guatemala: Dept. Zacapa: Oak-pine forest along upper reaches of Río Sitio Nuevo, Sierra de las Minas, between Santa Rosalía and the first waterfall, alt. 1,200–1,500 meters, January 9, 1942, *Julian A. Steyermark* 42212 (type in Herb. Field Mus.); cloud forest in ravine bordering Quebrada Alejandría, vicinity of Finca Alejandría, summit of Sierra de las Minas, 2,500 meters, October, 1939, *Steyermark* 29877.

The plant was seen also in cultivation in the celebrated garden of Don Mariano Pacheco in Guatemala City (*Standley* 63109), where the plants were said to have been brought from Verapaz, probably from the Sierra de las Minas of Baja Verapaz. *A. Coibionii* is related obviously to *A. parvispathum* Hemsl., a common plant of the dry hills of Santa Rosa, Baja Verapaz, and confined, so far as known, to that region. *A. parvispathum* has leaves appreciably different in outline, and constantly so, and a sessile spadix. This species is dedicated to William Coibion, Jr., of Webster Groves, Missouri, who as general assistant accompanied the junior author on his first expedition to Guatemala and contributed much to the success of that expedition.

Anthurium radicosum Standl. & Steyerm., sp. nov.—Herba epiphytica, caudice gracili elongato 3–4 mm. crasso, internodiis 7–12 cm. longis vel interdum brevibus, caulibus radices numerosas elongatas carnosas emittentibus; cataphylla caduca tenuia brunnea obtusa ca. 4 cm. longa et 1 cm. lata; petioli gracillimi 4–6 cm. longi breviter vaginati; lamina in sicco tenuis et fere membranacea anguste elliptico-oblonga 11–16 cm. longa 4–5 cm. lata, subabrupte acuminata, basi acuta vel breviter acuminata, in sicco fuscescens, subtus paullo pallidior et brunnescens, nervis primariis utroque latere ca. 12 gracillimis et vix prominulis inconspicuis in nervum collectivum submarginalem conjunctis; pedunculi gracillimi ca. 10 cm. longi; spatha reflexa pallide viridis oblongo-ovata 1.5–2 cm. longa ca. 7 mm. lata, obtusa atque apiculata, basi amplexicaulis; spadix sessilis vel

subsessilis gracilis ad anthesin 4.5 cm. longus 3 mm. crassus, sursum non angustatus, floribus subpaucis.—Guatemala: Dept. Alta Verapaz: Epiphytic on tree, along Río Icvolay, north and northwest of Finca Cubilgüitz to Quebrada Diablo, alt. 300–350 meters, March 6, 1942, *Julian A. Steyermark* 44776 (type in Herb. Field Mus.).—British Honduras: Pueblo Viejo, 500 meters, February, 1924, *W. A. Schipp* S678.

A relative of *A. Pittieri* Engler, of Costa Rica and Panama, but in that species the spathes are usually much larger and the spadix is slender-stipitate.

Anthurium retiferum Standl. & Steyerm., sp. nov.—Petioli 26–37 cm. longi et ultra crassi (6–8 mm.), 1–1.5 cm. infra basem laminae geniculati, geniculo fere 1 cm. crasso; lamina in sicco subcoriacea rigida plus minusve brunnescens vel fulvescens, oblongo-elliptica vel anguste oblongo-elliptica, 32–42 cm. longa 12–19 cm. lata, acuta vel apice subobtusa et apiculata, basi rotundata vel obtusissima, sublucida, fere concolor, nervis lateralibus primariis utroque latere ca. 12 supra impressis, subtus gracilibus maxime elevatis, nervis secundariis venisque valde elevatis et laxe reticulatis; pedunculus 19 cm. longus 4 mm. crassus; spatha (perfecta non visa) reflexa roseo-purpurea plus quam 6.5 cm. longa, ca. 13 mm. lata, cuspidato-acuminata; spadix sessilis cylindraceus 9 cm. longus 5 mm. crassus purpurascens.—Guatemala: Dept. Huehuetenango: Sierra de los Cuchumatanes, epiphytic, Cerro Huitz, between Mimanhuitz and Yulhuitz, alt. 1,500–2,600 meters, July 14, 1942, *Julian A. Steyermark* 48621 (type in Herb. Field Mus.); Cerro Negro, 2 miles east of Las Palmas, 1,600–2,000 meters, terrestrial on ridge in *Liquidambar* forest, *Steyermark* 51676.

A well-marked species, apparently, not very closely related to any other Guatemalan one, but perhaps of the general alliance of *A. parvispathum* Hemsl.

Anthurium titanium Standl. & Steyerm., sp. nov.—Planta gigantea, petiolis 55 cm. longis vel multo longioribus vix vaginatis sed prope basin paullo dilatatis, ca. 1.5 cm. infra basin laminae geniculatis, geniculo 1.5 cm. crasso; lamina in sicco chartacea vel crasse membranacea, rotundato-cordata, 50–120 cm. longa ca. 40–60 cm. lata, apice obtusa vel rotundata et late breviterque cuspidata, basi profunde cordata, sinu lato aperto, integra, e basi 7-nervia, nervis 2 extimis fere 1 cm. crassis, margine exteriore

longitudine 4–6 cm. nudo, 5–6 nervos crassos e latere inferiore emittentibus, nervis primariis lateralibus gracilibus remotis prominentibus in nervum collectivum e margine remotum conjunctis, venis prominulis laxe reticulatis; pedunculus 70 cm. longus et ultra prope basin 2 cm. crassus; spatha coriacea erecta, viridis rubro vel purpureo tincta, lanceolata, 20–26 cm. longa 4.5–6.5 cm. prope basin lata, anguste attenuato-acuminata, basi valde amplexicaulis; spadix brunnescenti-viridis caudiformis ca. 19–30 cm. longus 12–18 mm. prope basin crassus vel in vivo 2.5–5 cm. crassus, sensim attenuatus, spatha longior, crasse 3–4.5 cm. longe stipitatus, stipite usque 12 mm. crasso.—Guatemala: Dept. San Marcos: Terrestrial, Volcán de Tajumulco, above Finca El Porvenir, along Río Cabús to within 2 miles of Cueva de las Palomas, alt. 1,300–1,500 meters, March 16, 1940, *Julian A. Steyermark* 37963 (type in Herb. Field Mus.).

This appears to be an ally of *A. Liebmannii* Schott of Oaxaca, with which it was first identified, but in that species the leaves are 5-nerved from the base, and the spadix is sessile or nearly so.

Monstera grandifolia Standl. & Steyerm., sp. nov.—Frutex epiphyticus scandens, caulibus elongatis ca. 2 cm. crassis, glaber; petioli graciles ca. 25–35 cm. longi usque ad apicem anguste vaginati, geniculo ca. 15 mm. longo atque 8 mm. crasso; lamina crassa oblongo-ovata, ca. 50 cm. longa atque 26 cm. lata vel major et 35 cm. lata, ut videtur apice obtusa vel rotundata et breviter cuspidata, prope basin paullo angustata, basi ipsa late breviter cordata plus minusve inaequali, costa subtus crassa prominente, nervis primariis crassis prominentibus; pedunculi ca. 11 cm. longi, 1 cm. crassi; spatha ignota; spadix immaturus cylindraceus sessilis 18 cm. longus, 3 cm. crassus, dense multiflorus; stylus brevissimus lateque truncatus vel subtruncatus.—Guatemala: Dept. Petén: Low forest between Finca Yalpemech and Chinajá, alt. 50–100 meters, March 28, 1942, *Julian A. Steyermark* 45423 (type in Herb. Field Mus.).

Here probably belongs also *Steyermark* 38142, from Montaña del Mico, Izabal. It differs only in having the leaf blades distinctly acute at the base and falcately acuminate at the apex. From the common *M. acuminata* C. Koch of Guatemala this differs in its much larger leaves. Those of that species are either very obtuse or rounded at the base. In *M. belizensis* Lundell, which we have not seen, a species of nearby British Honduras, the leaves sometimes have a few perforations, and the style is conspicuously elongate.

COMMELINACEAE

Commelina alpestris Standl. & Steyerm., sp. nov.—Perennis, radicibus plurimis elongatis crasse carnosis fasciculatis, saepe acaulescens, vel in statu fructifero e basi vel paullo supra basin pauciramosa et usque ad 30 cm. alta vel ultra; folia omnia radicalia vel pauca caulina prope basin plantae evoluta, lanceolata, 11 cm. longa et 2.5 cm. lata vel minora, attenuato-acuminata, basi dilatata et vaginantia, vaginis membranaceis pallidis ca. 2.5 cm. longis et 1 cm. latis eciliatis; lamina glabra eciliata, supra viridis subtus paullo pallidior, marginibus cartilagineo-incrassatis; pedunculi plerumque simplices et scapiformes inter folia nascentes vel saepius e caule brevi basi 1–2-foliato nascentes, pedunculis primis et interdum omnibus brevissimis et vaginis fere celatis, pedunculis fructiferis vulgo solemniter elongatis et usque 22 cm. longis crassis et usque 5 mm. latis, laevibus glabrisque; spatha ad anthesin viridis ca. 3–3.5 cm. longa et complicata 2–2.5 cm. lata, obtusa vel acuta, in statu fructifero usque 3 cm. lata et 4 cm. longa, sparse hirsutula, insigniter inter nervos transverso-venosa; flores plurimi, pedicellis brevibus crassis glabris; sepala glabra pallide viridia 5 mm. longa subacuta; petala magna intense caerulea ca. 15 mm. longa.—Guatemala: Dept. Huehuetenango: Sierra de los Cuchumatanes, rocky limestone outcrops with *Juniperus*, vicinity of Chémal, alt. 3,700 meters, August 8, 1942, *Julian A. Steyermark* 50265 (type in Herb. Field Mus.); same region, December, 1940, *Standley* 81082; dry slopes between Chiantla and Patio de Bolas, alt. 2,500 meters, *Steyermark* 48238; near Tunimá, alt. 3,300–3,500 meters, *Steyermark* 48308. Dept. Chimaltenango: Open meadow, Cerro de Tecpám, region of Santa Elena, alt. 2,700 meters, December, 1938, *Standley* 58683; August, 1940, *John R. Johnston* 1715.

The relationship of this plant is with *C. coelestis* Willd., which is widely distributed in the mountains of Guatemala, and likewise ascends sometimes to high elevations. *C. alpestris*, however, is distinguishable at a glance from all Mexican and Guatemalan material of *C. coelestis* that we have seen, for it is acaulescent or has very short stems from which arise several very stout and thick, much elongate, scape-like peduncles. The spathes of *C. coelestis* are relatively and usually absolutely smaller than those of *C. alpestris*.

Zebrina huehueteca Standl. & Steyerm., sp. nov.—Perennis, caulibus decumbentibus vel adscendentibus, e nodis radicantibus, glaucis, glabris, 85 cm. longis; folia subsessilia, supra viridia subtus

argillaceo-viridia, glabra, lanceolata vel elliptico-lanceolata, 9–15 cm. longa 3–6 cm. lata; vaginae 1.5–2.2 cm. longae, glabrae vel apice parce ciliatae; bracteae 2 inaequales, 3–8 cm. longae; sepala connata, tubo 6 mm. longo, lobis 3 mm. longis, glabra; corolla alba, tubo 1.5 cm. longo, lobis elliptico-oblongis obtusis 6–7 mm. longis 2.5 mm. latis; stamina 6 paullo inaequalia; filamenta alba barbata 2–2.5 mm. longa; antherae albae, loculis rotundis.—Guatemala: Dept. Huehuetenango: Barranco slopes, along Río Trapichillo, between Paso del Boquerón below La Libertad and Democracia, alt. 1,000–2,100 meters, August 22, 1942, *Julian A. Steyermark* 51016 (type in Herb. Field Mus.).

The gamopetalous corolla and calyx place this plant in *Zebrina*. It is distinguished at once from *Z. pendula* and other later species of that genus by the glaucous stems, the glabrous leaves which are green above and silvery green beneath, the glabrous or almost glabrous sheaths which are only slightly ciliate at the apex, and the white corolla, filaments, and anthers.

LILIACEAE

Smilacina crassipes Standl. & Steyerm., sp. nov.—Terrestris vel epiphytica erecta vel dependens, caule interdum metrali crasso inferne fere 1 cm. crasso, basi aliquanto bulboso-incrassato; folia numerosa membranacea lanceolata vel oblongo-lanceolata vel oblongo-elliptica, vulgo 17–20 cm. longa et 4.5–5.5 cm. lata, interdum usque 8.5 cm. lata, attenuato-acuminata, basi obtusa vel rotundata et in petiolum crassum usque 7 mm. longum contracta; inflorescentia anguste paniculata 10–15 cm. longa 5–6 cm. lata, rhachi crassa angulata, ramis paucis angulo recto divaricatis crassis angulatis, vulgo 2–4-floris, pedicellis 5 mm. longis vel brevioribus crassis in sicco acute angulatis; perianthium pallide flavescens campanulatum, segmentis crassiusculis ovalibus vel ovali-ovalibus 6–7 mm. longis apice rotundatis, ad anthesin suberectis, plus minusve persistentibus; antherae ca. 1.3 mm. longae, staminibus perianthio paullo brevioribus; bacca laete rubra ca. 8 mm. diam.—Guatemala: Dept. Huehuetenango: Growing on rocks, Cerro Pueblo Viejo, rocky slopes above La Libertad, alt. 1,900 meters, August 20, 1942, *Julian A. Steyermark* 51003 (type in Herb. Field Mus.). Dept. San Marcos: Hanging from a tree, Volcán de Tajumulco, Potrero Tojó, Finca El Porvenir, 1,300 meters, March, 1940, *Steyermark* 37655.

The second collection cited was determined by R. W. Emons as *Smilacina paniculata* Mart. & Gal., but it is in fruit only, and does

not exhibit the flower characters that distinguish the plant here described as a new species. *S. crassipes* differs from *S. paniculata* in having much larger and thick perianth segments, also in the very thick pedicels and branches of the narrow panicle.

MALVACEAE

Robinsonella cordata Rose & Baker, Gard. & For. 10: 244. *f. 31.* 1897. *Rebsamenia arborea* Conzatti, Gén. Veg. Mex. 1903.—Dr. T. H. Kearney recently wrote to the senior author of the present paper, inquiring about the identity of the genus *Rebsamenia* Conzatti, which, although described as a tree, is not mentioned in *Trees and Shrubs of Mexico,* having been overlooked by the author. As described, *Rebsamenia* consisted of a single species, based upon a collection by V. González and C. Conzatti from Cerro de San Felipe, Oaxaca, Mexico, March 7, 1898. Conzatti's description is sufficiently ample, its most significant phrases indicating that the plant described is a tree and that its flowers are blue, which among Mexican Malvaceae can apply only to the genus *Robinsonella,* described by Rose and Baker in 1897. In her excellent monograph of *Robinsonella* (Journ. Arnold Arb. 12: 49. 1931) Mrs. Eva M. Fling Rousch does not mention *Rebsamenia,* but it is clear that this is referable to *Robinsonella cordata,* which is cited there (p. 58) as having been collected on Cerro de San Felipe by González and Conzatti March 7, 1898 (no. 671). This no. 671 is doubtless the type collection of *Rebsamenia cordata.*

SAURAUIACEAE

Saurauia cuchumatanensis Standl. & Steyerm., sp. nov.—Frutex 1.5 m. altus, ramis crassis dense setis longis patentibus ferrugineis setoso-hirsutis; folia magna subcoriacea breviter petiolata, petiolis crassis 2–3.5 cm. longis dense setoso-hirsutis; lamina oblonga vel elliptico-oblonga 17–25 cm. longa 6.5–8.5 cm. lata acuminata, basin rotundatam versus paullo angustata, inaequaliter serrata, dentibus salientibus, supra sat dense setis ferrugineis basi bulbosis setoso-hirsuta, subtus paullo pallidior sparse ad nervos venasque setis rigidis ferrugineis setoso-hirsuta, venis insigniter elevatis et arcte reticulatis; inflorescentiae foliis duplo breviores vel interdum folia aequantes longipedunculatae, parvae et condensatae vel interdum laxe paniculatae atque 16 cm. longae et 12 cm. latae, rhachi ramisque dense pilis ferrugineis setoso-hirsutis, floribus magnis breviter longeve pedicellatis; sepala dense pilis longis patentibus

ferrugineis basi bulbosis obtecta, in statu fructifero 8 mm. longa; petala alba rotundata ca. 9 mm. longa; antherae 2 mm. longae vel paullo ultra apice poris magnis dehiscentes; styli distincti.—Guatemala: Dept. Huehuetenango: Wet cloud forest, Cruz de Limón, between San Mateo Ixtatán and Nucá, Sierra de los Cuchumatanes, alt. 2,600–3,000 meters, July 31, 1942, *Julian A. Steyermark* 49810 (type in Herb. Field Mus.); Cerro Huitz, between Mimanhuitz and Yulhuitz, alt. 1,500–2,600 meters, July, 1942, *Steyermark* 48560.

In view of the wretched "monographic" account of this genus, it is inadvisable, probably, to propose further species until the status of those already described has been established. There is no group of tropical American plants more sadly in need of serious monographic study. Guatemalan plants of the genus suffered as much at the hands of Buscalioni as those of any other country, but we have been able to find names for most of the recognizable specific units represented by our rather ample material, and, fortunately, reduce to synonymy a number of the names that he proposed. There remain, however, three apparently distinct specific units for which we have been unable to find names among those proposed from Central America and Mexico, although it is quite possible that names for some of them may be found when order has been brought out of the jumble. *Saurauia cuchumatanensis* is a high-mountain plant, noteworthy for its abundant setose-hirsute pubescence of long spreading ferruginous setae and for its large and thick, conspicuously reticulate-veined leaves, which are broadest at or near the middle rather than above the middle as in most related Central American species.

Saurauia perseifolia Standl. & Steyerm., sp. nov.—Arbor 10-metralis, ramulis crassis dense stellato-pubescentibus vel tomentosis atque dense setis longis brunneis adscendentibus vel subadpressis setosis; folia majuscula membranacea, petiolis crassis ca. 2 cm. longis ut ramis indutis; lamina oblongo-obovata vel obovata 17–22 cm. longa 7.5–10 cm. lata acuta vel subacuta, basin anguste rotundatam versus aliquanto angustata, subintegra vel supra medium arcte serrulata, supra dense pilis patentibus vel subadpressis fulvis setosa, subtus paullo pallidior, densissime molliterque pilis patentibus fulvescentibus basi bulbosis setoso-pilosa; inflorescentiae pauciflorae densae usque ad 9 cm. longae longipedunculatae, pedunculis densissime breviter setosis et stellato-puberulis, pedicellis crassiusculis elongatis, floribus albis ca. 13 mm. latis vel paullo latioribus; sepala 4.5 mm. longa rotundo-ovata, apice obtusa vel rotundata, setis brevibus crassis puberulis dense furfuracea; petala late ovata vel

obovata apice obtusa vel rotundata, ca. 6 mm. longa, glabra; filamenta basi pilosa, antheris fere 2 mm. longis apice poris magnis dehiscentibus.—Guatemala: Dept. Izabal: Along Río Tameja, Cerro San Gil, alt. 50 meters, December 24, 1941, *Julian A. Steyermark* 41748 (type in Herb. Field Mus.).

This tree grows at or near sea level, an unusually low elevation for plants of this genus, at least in Central America. It is noteworthy for the large, thin, broad, mostly subentire leaves and very dense pubescence of slender, relatively soft, spreading, yellowish hairs.

Saurauia veneficorum Standl. & Steyerm., sp. nov.—Arbor ca. 6-metralis, ramulis petiolisque setis longis gracilibus rigidis patentibus vel subreflexis brunnescentibus densissime setosis, petiolis gracilibus 1.5–2 cm. longis; folii lamina obovato-oblonga vulgo 9–16 cm. longa et 4–6 cm. lata, apice acuta vel rotundata, basin subacutam vel anguste rotundatam versus sensim angustata, supra pilis longis gracilibus patentibus sparse setosa, subtus pilis longis gracilibus dense brunnescenti-setosa, inaequaliter serrata vel serrulata; inflorescentia laxa pauciflora graciliter longipedunculata, vulgo foliis duplo brevior vel brevior, interdum magis elongata, floribus albis 1.5 cm. latis vel latioribus crasse vel graciliter pedicellatis, pedicellis setis brunnescentibus densissime longisetosis; sepala ovalia vel rotundata 6–8 mm. longa, apice rotundata vel obtusissima, setis longis gracilibus patentibus brunnescentibus dense setosis; styli glabri distincti; fructus siccus ca. 1 cm. diam. globosa vel depresso-globosa, pilis longis laxis mollibus sparse pilosa.—Guatemala: Dept. Chiquimula: Middle slopes of Montaña Norte to El Jutal, on Cerro Brujo, southeast of Concepción de las Minas, alt. 1,700–2,000 meters, November 2, 1939, *Julian A. Steyermark* 31081 (type in Herb. Field Mus.); Cerro Tixixí, north of Jocotán, 500–1,500 meters, *Steyermark* 31626.

Here probably belongs also *W. R. Hatch & C. L. Wilson* 229 from Chicoyón, Cobán, Alta Verapaz. This species is related to *S. subalpina* Donn. Smith, in which the setae of the petioles are closely appressed rather than spreading.

PASSIFLORACEAE

Passiflora macrostemma Killip, sp. nov.—Glaberrima; stipulae falcato-subulatae; petioli eglandulosi; folia profunde bilobata, lobis erectis obtusis; pedunculi bini, bracteis setaceis; flores purpurei; corona 1-seriata, filamentis filiformibus; operculum subplanum,

erectum; limen cupuliforme erectum gynophorum cingens, margine divaricato.

Herbaceous vine, glabrous throughout; stem subangular; stipules falcate-subulate, 4 mm. long, subpersistent; petioles 1–1.5 cm. long, glandless; leaf blades membranous, sublustrous on both surfaces, rounded or subtruncate at the base, ocellate beneath, bilobed one-half to two-thirds their length, 1.5–4 cm. long along the midnerve, 4–9 cm. along the lateral nerves, 3–7 cm. between the apices of the lobes, the lobes erect or very slightly divaricate, 1.2–3 cm. wide, rounded, the sinus rounded or subtruncate; peduncles in pairs, 2–3 cm. long, divaricate; bracts setaceous, 2.5–3 mm. long, borne just below the base of the flower; flowers 3–4 cm. wide when expanded, the calyx tube broadly campanulate; sepals lanceolate, about 2 cm. long, 1 cm. wide at the base, obtuse, ecorniculate, greenish purple without, deep lavender within; petals oblong, about 1.5 cm. long, 4–5 mm. wide, obtuse, membranous, deep lavender; corona 1-ranked, the filaments numerous, filiform, 6–7 mm. long, erect; operculum membranous, erect, 4–5 mm. high, very slightly plicate, purple, green at the base; nectar ring none; limen about 3 mm. high, the base closely surrounding the gynophore, the margin spreading outward, entire; gynophore about 1 cm. long, rather stout; ovary subglobose.—Guatemala: Dept. Chiquimula: Volcán de Quezaltepeque, 3–4 miles northeast of Quezaltepeque, alt. 1,500–2,000 meters, November 8, 1939, *Julian A. Steyermark* 31519 (type in Herb. Field Mus.); from the same general vicinity, *Steyermark* 31281. Dept. Jalapa: Montaña Durazno, 2 miles east of San Pedro Pinula, alt. 1,400–1,900 meters, *Steyermark* 32985.

In the monograph of the American Passifloraceae (Field Mus. Bot. 19) this species would come in the subgenus *Plectostemma*, section Decaloba, series Organenses, where it is most nearly related to *P. salvadorensis*. The foliage of the two is very similar, though in *P. salvadorensis* the leaf lobes are more divergent and the blades are of a thinner texture. The petals are barely a quarter as long as the sepals in *P. salvadorensis*, the operculum is lower, the gynophore is longer and more slender, and the limen is merely a slightly elevated ring on the floor of the calyx tube.

LYTHRACEAE

Crenea patentinervis (Koehne) Standl., sp. nov. *C. surinamensis* (L. f.) Koehne, subsp. *patentinervis* Koehne, Bot. Jahrb. 3: 320. 1882.

This shrub of tidal swamps is known only from the Pacific coast of Colombia, *C. surinamensis*, the only other species of the genus having a rather wide range, from Colombia or perhaps Panama through the Guianas to Bahia in Brazil.

ERICACEAE

Vaccinium minarum Standl. & Steyerm., sp. nov.–Frutex vel arbuscula 3–4.5 m. alta ramosa, ramis gracilibus subteretibus fuscis vel brunnescentibus, novellis saepe rubescentibus puberulis cito glabratis sat dense foliatis; folia inter minora coriacea breviter petiolata plus minusve lucida, petiolo crasso 3–5 mm. longo minute puberulo vel glabro; lamina elliptico-oblonga, obovato-oblonga vel lanceolata 2.5–3.5 cm. longa 8–15 mm. lata obtusa vel apicem obtusum versus angustata, basi acuta vel cuneata, remote et subobsolete adpresso-crenata, supra viridis glabra, costa interdum subimpressa, subtus paullo pallidior glabra epunctata, costa crassa prominula, nervis lateralibus obsoletis vel prominulis paucis, venis obsoletis; racemi axillares brevissimi pauciflori foliis plus quam duplo breviores, pedicellis rubris 3–7 mm. longis infra medium bracteolatis puberulis; hypanthium 1.5 mm. longum pilosulum, sepalis 5 triangulari-acuminatis 1 mm. longis extus puberulis; corolla rosea 6 mm. longa 2 mm. lata extus albido-hispidula, lobis 5 ovatis subacutis erectis ca. 1.3 mm. longis.—Guatemala: Dept. Zacapa: Middle and upper southern slopes of Volcán Gemelos, Sierra de las Minas, alt. 2,100–3,200 meters, January 26, 1942, *Julian A. Steyermark* 43295 (type in Herb. Field Mus.); Sierra de las Minas, between Loma El Picacho and Cerro de los Monos, 2,000–2,600 meters, *Steyermark* 42836.

The second collection cited was reported under the description of *Vaccinium haematinum* Standl. & Steyerm. (Field Mus. Bot. 23: 139. 1944) as probably referable to that species, but further material of the same plant and of *V. haematinum* that has come to hand shows that two distinct species are represented. In *V. haematinum* the flowers are glabrous, in *V. minarum* densely pubescent throughout, and there are obvious leaf differences.

MYRSINACEAE

Ardisia apoda Standl. & Steyerm., sp. nov.—Arbuscula 6-metralis, ramis crassis ferrugineo-furfuraceis vel glabratis subteretibus ut videtur dense foliatis; folia magna crasse membranacea sessilia

oblongo-oblanceolata, ca. 40 cm. longa et 9 cm. lata, longiacuminata, basin versus sensim anguste attenuata, basi ipsa late marginata anguste rotundata, integra, supra viridia glabra, nervis obscuris, subtus pallidiora brunnescentia minute densiuscule ferrugineo-lepidota, dense fusco-punctata, costa gracili elevata, nervis lateralibus tenerrimis inconspicuis, venis vix prominulis arcte reticulatis; inflorescentia bene evoluta non visa, terminalis, ut videtur simpliciter ramosa pedunculata sparse furfuraceo-lepidota, floribus ut videtur breviter racemosis, pedicellis fructiferis fere 1 cm. longis crassiusculis sparse lepidotis; sepala rotundata 1.5 mm. longa ciliolata et suberosa, apice rotundata, grosse nigro-punctata; fructus globosus glaber 8 mm. diam. niger.—Guatemala: Dept. Izabal: Wet mixed forest, alt. 300–900 meters, Cerro San Gil, December 25, 1941, *Julian A. Steyermark* 41923 (type in Herb. Field Mus.).

It is unsatisfactory and probably inadvisable to describe a new species from this material, which is vague as to the form and lesser details of the inflorescence, although it shows the leaf characters well. It is clear, however, that the single collection represents a species of *Ardisia* quite unlike any other known from northern Central America, nor does it appear referable to any of the numerous species described from Costa Rica. Among Guatemalan species of *Ardisia* it is distinguished at once by its sessile leaves, the perhaps theoretical petioles being broadly margined to the very base, where the blade is narrowly rounded or very obtuse.

Ardisia Vatteri Standl. & Steyerm., sp. nov.—Frutex 1–3-metralis ut videtur dense ramosus, ramis brunneis primo sat dense ferrugineo-furfuraceis, cito glabratis, dense foliatis; folia parva breviter petiolata firme membranacea, petiolo lato submarginato 3–5 mm. longo minute sparseque lepidoto vel fere glabro; lamina anguste obovato-elliptica vel elliptica 2–4 cm. longa 8–18 mm. lata obtusa vel acuta, basi cuneata, grosse supra medium crenato-dentata vel rarius subintegra, supra glabra, costa subimpressa, nervis obsoletis, subtus vix pallidior sparse minute brunnescenti-lepidota vel fere omnino glabra, costa gracili prominente, nervis lateralibus inconspicuis; inflorescentia terminalis parva corymbiformis simpliciter ramosa vix ultra 2 cm. longa laxe pauciflora basi foliaceo-bracteata, bracteis superioribus oblongis obtusis usque 4 mm. longis subpersistentibus, pedicellis gracilibus erectis 4–5 mm. longis dense glandulis sessilibus vel substipitatis obsitis; sepala lanceolato-oblonga 1.8 mm. longa obtusa grosse punctata glanduloso-ciliolata; petala viridescenti-alba 3 mm. longa glanduloso-ciliolata apicem

obtusum versus angustata; filamenta petalis bene longiora ca. 4 mm. longa, antheris late cordatis 0.7 mm. longis; fructus globosus 4 mm. diam. glaber grosse punctatus.—Guatemala: Dept. Huehuetenango: Cerro Huitz, between Mimanhuitz and Yulhuitz, Cerro de los Cuchumatanes, alt. 1,500–2,600 meters, July 14, 1942, *Julian A. Steyermark* 48558 (type in Herb. Field Mus.). Dept. Zacapa: Between Loma El Picacho and Cerro de los Monos, Sierra de las Minas, 2,000–2,600 meters, *Steyermark* 42834. Dept. Chiquimula: Cerro Brujo, 1,700–2,000 meters, *Steyermark* 31023 (sterile). Dept. El Progreso: Below summit of Volcán de Santa Luisa, Sierra de las Minas, about 3,000 meters, *Steyermark* 43555.

One of the most distinct species found thus far in all Central America, easily recognized by its leaves, which are smaller than those of any other species of the Central American region. It is named for Albert E. Vatter, Jr., of Glenview, Illinois, who accompanied the junior author on his second expedition to Guatemala, and capably performed the duties of chief assistant and photographer. Mr. Vatter's work contributed greatly to the success of that expedition.

SYMPLOCACEAE

Symplocos abietorum Standl. & Steyerm., sp. nov.—Frutex vel arbor 4.5–9 m. alta dense ramosa, ramis crassis primo sparse pilis brunnescentibus rigidis patentibus hispidulis, internodiis brevibus; folia parva petiolata rigide coriacea, petiolo crasso 4–5 mm. longo sparse hispidulo; lamina ovalis vel obovato-ovalis 3–4 cm. longa 1.5–2 cm. lata, apice rotundata vel obtusissima, basi obtusa vel rotundata, in sicco lutescens, manifeste repando-denticulata, supra glabra lucida, venis impressis, subtus fere concolor, sparse pilis brunnescentibus subpatentibus pilosa, nervis lateralibus utroque latere ca. 6 gracilibus prominentibus, venis prominentibus arcte reticulatis; flores solitarii sessiles vel subsessiles, bracteis rotundo-ovatis obtusis apiculatis ca. 2 mm. longis ciliatis extus glabris; sepala apice fructus persistentia rotundo-ovata ut videtur glabra ciliata; fructus glaber late ellipsoideus ca. 2 cm. longus et 1.5 cm. latus basi et apice rotundatus sessilis.—Guatemala: Dept. Huehuetenango: Moist cool mixed cloud forest, with *Pinus Ayacahuite* and *Abies guatemalensis*, around Rancho de Teja, 3 miles west of San Mateo Ixtatán, Sierra de los Cuchumatanes, alt. 3,330 meters, July 9, 1942, *Julian A. Steyermark* 48482 (type in Herb. Field Mus.); also no. 48467, with the same data.

In its very small, thick-coriaceous, conspicuously denticulate leaves this is quite unlike any other species of *Symplocos* known from Mexico or northern Central America.

Symplocos culminicola Standl. & Steyerm., sp. nov.—Arbor 7–12-metralis ut videtur omnino glabra, ramis crassis subteretibus cinnamomeis vel ferrugineis, internodiis plus minusve elongatis; folia majuscula breviter petiolata firme coriacea in sicco lutescentia lucida, petiolo crasso 6–10 mm. longo; lamina elliptico-oblonga vel obovato-ovalis 6–14.5 cm. longa 3–6.5 cm. lata, apice late rotundata vel apicem obtusissimum versus paullo angustata, basi subacuta usque subrotundata, nervis supra prominulis, subtus pallidior, costa crassiuscula elevata, nervis lateralibus utroque latere 7–10 gracilibus prominentibus vel prominulis, venis prominulis et laxe reticulatis vel interdum obsoletis, marginibus integris vel subintegris interdum revolutis; inflorescentiae (perfectae non visae) pauciflorae vel interdum 1-florae pedunculatae, pedunculis 1-floris ca. 2 cm. longis, inflorescentiis ut videtur interdum subracemosis, floribus longipedicellatis, ramis pedicellisque crassis glabris; hypanthium glabrum, sepalis ovato-rotundatis in statu fructifero ca. 4 mm. longis ciliolatis apice rotundatis vel obtusissimis; fructus oblongo-ellipsoideus 2.5 cm. longus 1.5 cm. latus basi obtusus vel subrotundatus.—Guatemala: Dept. Chiquimula: Cloud forest, summit of Volcán de Quezaltepeque, alt. about 2,000 meters, November 8, 1939, *Julian A. Steyermark* 31489 (type in Herb. Field Mus.). Dept. El Progreso: Montaña Canahui, near upper limit of Finca Caieta, Sierra de las Minas, 2,300 meters, *Steyermark* 43808; hills north of Finca Piamonte, in cloud forest near summit of Volcán de Santa Luisa, alt. 3,200 meters, *Steyermark* 43504.

It is possible that two species are represented by the material cited, but until more ample material, with flowers, has been collected, it seems preferable to treat the three collections as representing a single species. In foliage characters *S. culminicola* somewhat resembles *S. flavifolia* Lundell of Chiapas, but that has less obtuse, usually undulate or crenate leaves and much smaller fruits.

Symplocos Vatteri Standl. & Steyerm., sp. nov.—Arbor, ramulis gracilibus brunneis dense pilis sordidis vel brunnescentibus sericeis vel adpresso-pilosis; folia modica breviter petiolata chartacea, petiolo crasso 6–15 mm. longo dense piloso; lamina elliptico-oblonga 9–14 cm. longa 4.5–5.5 cm. lata acuminata, basi rotundata vel late obtusa et interdum abrupte breviter decurrens, supra viridis sparse

pilis longis laxis pallidis pilosa vel glabrata, sublucida, nervis venisque prominulis sed vix conspicuis, integra, subtus multo pallidior et brunnescens, laxe sericea, costa gracili elevata, nervis lateralibus utroque latere ca. 13 prominentibus, venis prominulis laxe reticulatis; pedunculi axillares 1-flori vel rare 2-flori 2–4 cm. longi dense sordido-sericei vel subtomentosi graciles; sepala suborbicularia extus densissime pilis longis albidis vel ochraceis sericea, apice rotundata; corolla pallide purpurea, extus densissime pilis longis albis sericea, fere 2 cm. longa, lobis obovato-rotundatis apice late rotundatis, intus glabris, denticulatis vel erosis; stamina numerosissima pauciseriata corollam fere aequantia, filamentis crassis minute papillosis, antheris vix 0.7 mm. longis.—Guatemala: Dept. Huehuetenango: Moist cool mixed cloud forest with *Pinus Ayacahuite* and *Abies guatemalensis*, around Rancho de Teja, 3 miles west of San Mateo Ixtatán, Sierra de los Cuchumatanes, alt. 3,330 meters, July 9, 1942, *Julian A. Steyermark* 48463 (type in Herb. Field Mus.).

From all other *Symplocos* species of Mexico and northern Central America this is distinguished at once by its unusually large flowers and by the greatly elongate, 1-flowered peduncles. It is a pleasure to dedicate this species to Albert E. Vatter, Jr., who was especially interested in the flora of the Sierra de los Cuchumatanes.

LOGANIACEAE

Buddleia euryphylla Standl. & Steyerm., sp. nov.—Arbor 7–15-metralis, ramis crassis obtuse tetragonis dense stellato-tomentosis, tomento sublaxo brunnescente; folia magna petiolata membranacea, petiolo crasso 3–7 cm. longo laxe tomentoso; lamina late ovata vel elliptico-ovata 15–25 cm. longa et 9.5–15 cm. lata vel ultra, subacuta usque breviter acuminata, basi late rotundata usque acuta non decurrens, integra vel undulata, supra viridis in statu adulto fere omnino glabra, nervis venisque inconspicuis, subtus pallidior atque brunnescens, ubique dense tomentosa, tomento e pilis inaequalibus mollibus sublaxis non adpressis composito, costa crassa elevata, nervis lateralibus utroque latere ca. 12 prominentibus, nervis vix prominulis laxe reticulatis; inflorescentiae paniculatae magnae pedunculatae interdum 30 cm. longae et fere aequilatae repetite ramosae, laxae, ubique tomento laxo e pilis ramosis composito dense indutae, floribus subcapitatis, capitulis laxe cymoso-paniculatis breviter pedunculatis paucifloris; calyx 3 mm. longus dense stellato-tomentosus, dentibus late triangularibus obtusis; corolla flava 4 mm. longa, lobis 4 orbiculatis extus dense stellato-

tomentulosis, intus basi sparse hispidulis.—Guatemala: Dept. El Progreso: In ravine, Sierra de las Minas, between Finca Piamonte and top of Montaña Piamonte, along Joya Pacayal, alt. 2,500–3,000 meters, February 7, 1942, *Julian A. Steyermark* 43628 (type in Herb. Field Mus.); Sierra de las Minas, between El Jute de Cobana and Finca Piamonte, 1,400–2,400 meters, *Steyermark* 43377 (sterile).

The relationship of this plant is obviously with *B. Skutchii* Morton, a common species of the Guatemalan mountains, but unknown in the Oriente. It differs from *B. euryphylla* in its much smaller flowers, small many-flowered heads, and usually much smaller leaves.

ASCLEPIADACEAE

Asclepias Woodsoniana Standl. & Steyerm., sp. nov.—Herba perennis erecta, caule gracili subsparse foliato bifarie albido-pubescente; folia crassiuscula breviter petiolata opposita, petiolo crassiusculo 3–5 mm. longo glabrato; lamina fere linearis 4–8 mm. lata e basi subtruncata fere subhastata sensim apicem acutum versus attenuata 5.5–11 cm. longa utrinque glabra vel sparsissime puberula, 1-nervia, subglaucescens; umbellae apice caulis et in axillis foliorum supremis 2–4, 1.5–3.5 cm. longe pedunculatae, ca. 12-florae, pedicellis gracilibus 10–14 mm. longis griseo-puberulis; calycis lobi oblongi acuti usque ad 2 mm. longi puberuli; corolla ut videtur pallide viridis 4.5 mm. longa glabra, lobis latis obtusis reflexis; columna staminalis crassa fere 1 mm. longa; foliola coronae ovata obtusa basi contracta et breviter unguiculata subcucullata; antherae 2.3 mm. longae apice albo-scariosae; corniculi coronae breviter exserti; folliculi non visi.—Guatemala: Dept. Jutiapa: Salt flats, potreros between Trapiche Vargas and Asunción Mita, alt. about 500 meters, November 15, 1939, *Julian A. Steyermark* 31781 (type in Herb. Field Mus.).

The nearest relationship of this species is not obvious, but of the Central American species it suggests only *A. rosea* HBK. That, however, has much narrower leaves with acute or attenuate, sessile bases, and differs in numerous other respects. *A. Woodsoniana* has been checked with all the species recorded from Mexico, but none of them agree at all closely with it. It is named for Dr. Robert E. Woodson, Jr., to whom we are much obligated for determinations of many of our Guatemalan Asclepiadaceae.

Cynanchum stenomeres Standl. & Steyerm., sp. nov.—Scandens herbacea vel suffrutescens, caulibus interdum 2 m. longis

gracillimis obscure bifarie puberulis vel glabris pallide viridibus interdum purpurascentibus, internodiis plerumque foliis longioribus; folia crasse membranacea penninervia breviter petiolata glabra vel sparse minute obscureque ad venas incurvo-puberula, petiolo gracili 4–5 mm. longo; lamina lineari-lanceolata 3–6 cm. longa 4–7 mm. lata longe anguste attenuata, basi obtusa vel acuta, supra intense viridis, costa nervisque interdum impressis, subtus multo pallidior, costa prominente, nervis lateralibus tenerrimis obscuris; inflorescentiae umbelliformes axillares ca. 10-florae pedunculatae, pedunculo gracili usque ad 8 mm. longo vulgo breviore, pedicellis glabris vel sparse puberulis 2.5–4 mm. longis; flores albi fragrantes ca. 4 mm. longi; calycis lobi ovato-oblongi minuti obtusi dorso sparse minuteque puberuli vel glabri; corolla in alabastro oblongo-ovoidea vel oblonga apice obtusa, profunde lobata, lobis lanceolato-oblongis vel oblongo-linearibus saepius prope basin angustatis, extus glabris intus dense albo-pilosulis; gynostegium longistipitatum, stipite calyce duplo longiore, coronae lobis e basi parva anguste ovoidea anguste filiformi-attenuatis corollae lobos fere aequantibus; stigma apice breviter rostratum, rostro appendicibus antherarum vix longiore.—British Honduras: All Pines, open places, at sea level, February 5, *William A. Schipp* 674 (type in Herb. Field Mus.); El Cayo District, mountain pine ridge, San Agustín, in pimento palm grove, in 1936, *C. L. Lundell* 6656; Gracie Rock, Sibun River, *Percy H. Gentle* 1755; on bushes in broken ridge, 8 miles northeast of Boomtown, *Hugh O'Neill* 8660.

In the present confused state of this genus it is difficult to decide what the relationship of this species may be, but it is clearly unlike any species of Mexico, Central America, and the West Indies of which there is material at hand for comparison. The several collections cited have all been determined as *Metastelma pedunculare* Dcne., described from Quezaltenango, Guatemala, and probably synonymous with *Cynanchum Schlechtendalii*. All forms of that species differ obviously in their relatively and usually absolutely short and broad, broad-based leaves that never are long-attenuate at the apex. There are also important differences in flower structure.

While we do not care to make miscellaneous new combinations in the genus *Cynanchum*, to which *Metastelma* is quite properly reduced by Woodson in his revolutionary but apparently excellent realignment of the American genera of Asclepiadaceae, the following new names are necessary for treatment of the few Guatemalan species of *Cynanchum*.

Cynanchum chiapense (Gray) Standl. & Steyerm., comb. nov. *Metastelma chiapense* Gray, Proc. Amer. Acad. 21: 397. 1886.

Cynanchum collinum (Blake) Standl. & Steyerm., comb. nov. *Metastelma collinum* Blake, Contr. U. S. Nat. Herb. 24: 19. 1929.

Cynanchum Schlechtendalii (Dcne.) Standl. & Steyerm., comb. nov. *Metastelma parviflorum* Schlecht. Linnaea 6: 731. 1831, not R. Br., 1809. *M. Schlechtendalii* Dcne. in DC. Prodr. 8: 513. 1844. *M. pedunculare* Dcne. op. cit. 514, syn. nov. *M. decipiens* Pittier, Contr. U. S. Nat. Herb. 13: 97. *f. 4.* 1910, syn. nov.—Perhaps we are in error in reducing to synonymy the two names cited here, but there are no obvious characters by which the two species, based on Guatemalan material, can be separated from *C. Schlechtendalii.* Decaisne does not suggest any important differences between his two species, and Pittier in separating *M. decipiens* relied only upon Decaisne's descriptions. We have seen type material of all three of these species.

Marsdenia blepharodes Standl. & Steyerm., sp. nov.—Scandens suffruticosa, caulibus teretibus gracilibus, in statu juvenili sparse puberulis cito glabratis; folia inter minora breviter petiolata membranacea, petiolo gracili 6–15 mm. longo glabro vel glabrato; lamina oblongo-lanceolata 7.5–10.5 cm. longa 2–2.5 cm. lata acuminata vel longiacuminata, basin versus longiattenuata, glabra, subtus paullo pallidior, nervis lateralibus utroque latere vulgo 3 subtus prominentibus; inflorescentia axillaris sessilis multiflora densa ca. 1.5 cm. diam., pedicellis crassiusculis 4–5 mm. longis sparse puberulis; calyx 2.5–3 mm. longus extus dense albido-strigosus ad medium 5-lobus, lobis ovalibus apice rotundatis dense ciliatis; corolla intense purpurascens extus glabra 4.5 mm. longa, lobis 5 late oblongis apice obtusissimis intus dense papilloso-puberulis tubo paullo longioribus; coronae squamae late rhombeo-ovatae vix ultra 1 mm. longae; stigma apice planum vel subplanum.—Guatemala: Dept. Quezaltenango: Climbing on tree fern bordering forest, San Juan Patzulín, alt. about 1,500 meters, January 6, 1940, *Julian A. Steyermark* 33615 (type in Herb. Field Mus.).

This evidently is related to *M. mayana* Lundell, of British Honduras and Guatemala, but in that the lateral nerves of the leaves are more numerous and the calyx lobes are glabrous dorsally, while the lobes of the corolla are shorter than the tube.

VERBENACEAE

Aegiphila hoffmannioides Standl. & Steyerm., sp. nov.—Frutex 1.5–2.5 m. altus, ramis crassiusculis ad nodos aliquanto dilatatis pallide ferrugineis glabris, internodiis 1.5–2 cm. longis; folia modica graciliter petiolata crasse herbacea, petiolo 2–3.5 cm. longo glabro; lamina elliptica vulgo 10–17 cm. longa vel ultra, 5–7.5 cm. lata, subabrupte longiuscule acuminata, basi acuta vel acuminata, glabra, supra in sicco viridis opaca, subtus brunnescens, costa crassiuscula subtus prominente, nervis lateralibus utroque latere ca. 8 arcuatis angulo lato adscendentibus prominentibus, venis inconspicuis; inflorescentiae axillares umbelliformes plerumque triflorae petiolis breviores, pedunculo ca. 6 mm. longo gracili, pedicellis minute puberulis 4–5 mm. longis; calyx glaber turbinatus truncatus 3–4 mm. altus atque aequilatus; corolla flava ca. 7–8 mm. longa extus glabra, tubo brevi crasso, lobis paullo inaequalibus lanceolato-oblongis obtusis tubo bene longioribus.—Guatemala: Dept. Huehuetenango: Near Maxbal, Sierra de los Cuchumatanes, about 17 miles north of Barillas, alt. 1,500 meters, July 15–16, 1942, *Julian A. Steyermark* 48843 (type in Herb. Field Mus.).

In gross characters this species resembles closely *A. pauciflora* Standl. of British Honduras, but in that the calyx is abundantly strigose on the outer surface, rather than glabrous.

Clerodendron mimicum Standl. & Steyerm., sp. nov.—Frutex epiphyticus ramosus, ramis crassis subteretibus ochraceis vel brunnescentibus, sparse villoso-hirsutis, internodiis foliis multo brevioribus; folia opposita breviter petiolata subcoriacea lucida, petiolo crassiusculo 5–10 mm. longo villoso-piloso vel glabrato; lamina elliptica vel elliptico-obovata, interdum subrhombeo-obovata, 5–12 cm. longa 3–7 cm. lata, obtusa vel subacuta, basi cuneata et saepe decurrens, supra glabra, costa nervisque impressis, subtus fere concolor, in axillis nervorum sparse villoso-pilosa, costa elevata, nervis lateralibus utroque latere vulgo 4 gracilibus elevatis angulo semirecto adscendentibus arcuatis, venis inconspicuis laxissime reticulatis; flores axillares solitarii, vel pauci et fasciculati, pedicellis gracilibus fere rectis fere 2.5 cm. longis sparse breviter pilosis; calyx lobis inclusis 9–11 mm. longus sparsissime pilosulus vel fere glaber, tubo campanulato apice ca. 5 mm. lato subtruncato, lobis approximatis lineari-lanceolatis basi paullo dilatatis apicem versus sensim attenuatis erectis vel adscendentibus tubo subaequalibus; corolla intense purpureo-rubra extus glabra, tubo lato recto ca. 22 mm. longo

5 mm. lato sursum vix dilatato, lobis rotundo-ovatis apice rotundatis 3.5 mm. longis ciliolatis; stamina inclusa.—Guatemala: Dept. Huehuetenango: Cerro Huitz, between Mimanhuitz and Yulhuitz, Sierra de los Cuchumatanes, alt. 1,500–2,600 meters, July 14, 1942, *Julian A. Steyermark* 48631 (type in Herb. Field Mus.). Dept. Zacapa: Volcán Gemelos, Sierra de las Minas, 2,100–3,200 meters, January, 1942, *Steyermark* 43267; Sierra de las Minas, between Loma El Picacho and Cerro de los Monos, 2,000–2,600 meters, *Steyermark* 42832.

In general appearance this species closely resembles *C. pithecobium* Standl. & Steyerm., which grows in Guatemala in the departments of Suchitepéquez and Quezaltenango. It may be too closely related to that species, which it resembles in every respect except the calyx, which is decidedly different. The calyx in *C. pithecobium* is barely half as large and has very short lobes that are widely separated at the base.

SOLANACEAE

Lycianthes barbatula Standl. & Steyerm., sp. nov.—Frutex 3–4.5 m. altus, ramis gracilibus glabris; folia crasse membranacea breviter petiolata, paris maxime inaequalia, petiolo gracili glabro 7–20 mm. longo; lamina foliorum majorum elliptico-oblonga vel ovato-oblonga 7–16 cm. longa 2.8–6.5 cm. lata, acuta vel acuminata, apice ipso obtuso, basi suboblique acuta vel obtusa, supra viridis glabra, subtus vix pallidior secus costam sparse denseve pilis sordidis longiusculis barbata, aliter glabra, nervis lateralibus utroque latere 6–7; folia minora paris breviter petiolata suborbicularia usque late ovata vel rotundo-ovata plerumque 1–3 cm. longa et fere aequilata, obtusa vel apice rotundata, basi rotundata; flores axillares fasciculati pauci, pedicellis gracillimis 2–2.5 cm. longis glabris; calyx late campanulatus 2.5 mm. longus glaber fere ad apicem appendicibus 5 linearibus vel filiformibus viridibus 3 mm. longis vel ultra onustus; corolla late campanulata alba ca. 12 mm. longa glabra; stamina aequalia, filamentis glabris antheris paullo longioribus, antheris 3 mm. longis oblongis; bacca globosa alba fere 1 cm. diam.—Guatemala: Dept. Suchitepéquez: Volcán de Santa Clara, between Finca El Naranjo and upper slopes, alt. 1,250–2,650 meters, May 23, 1942, *Julian A. Steyermark* 46653 (type in Herb. Field Mus.). Dept. Chimaltenango: Slopes of Volcán de Fuego, above Finca Montevideo, along Barranco Espinazo, 1,200–1,600 meters, September, 1942, *Steyermark* 52055.

An apparently well-marked species, not particularly close to any known previously from Guatemala, but related to the following new species.

Lycianthes orogenes Standl. & Steyerm., sp. nov.—Frutex vel arbuscula 1.5–3 m. alta et ultra glabra, ramis gracilibus; folia membranacea vel crasse membranacea petiolata paris valde inaequalia, petiolo 7–25 mm. longo; lamina foliorum majorum oblongo-elliptica vel elliptico-lanceolata vulgo 7–18 cm. longa et 1.5–5 cm. lata, acuminata vel longiacuminata, acumine ipso obtuso, basi cuneato-attenuata, subtus paullo pallidior, nervis lateralibus utroque latere ca. 9; folia minora similia sed multo breviora 1.5–4.5 cm. longa, interdum ovata vel lanceolato-ovata; flores axillares fasciculati pauci, pedicellis gracillimis plerumque 2–2.5 cm. longis; calyx turbinato-campanulatus 3 mm. longus basi acutus truncatus, prope apicem appendicibus 5 erectis viridibus linearibus vix ultra 1 mm. longis onustus; corolla alba late campanulata 7 mm. longa et ultra glabra; stamina aequalia; fructus globosus ca. 8 mm. diam.—Guatemala: Dept. Chimaltenango: Southwestern slopes of Volcán de Fuego, above Finca Montevideo, along Barranco Espinazo, alt. 1,200–1,600 meters, September 20, 1942, *Julian A. Steyermark* 52104 (type in Herb. Field Mus.); Panajabal, 1,350 meters, January, 1939, *Standley* 62118, 62136. Dept. Quezaltenango: Volcán de Zunil, at and above Aguas Amargas, February, 1939, *Standley* 65304; along old road between Finca Pirineos and Patzulín, 1,200–1,400 meters, February, 1941, *Standley* 87146, 86997, 87013.

There are referred here also several other collections, from the departments of Quezaltenango and Sacatepéquez. The shrub is common in the central and western mountains of Guatemala, but we have found it in flower but once. It is related to *L. barbatula*, described above, but seems constantly different in its quite glabrous leaves and much shorter calyx appendages.

Physalis amphitricha (Bitter) Standl. & Steyerm., comb. nov. *Saracha amphitricha* Bitter, Repert. Sp. Nov. 20: 362. 1924.—The type of this species is *Bernoulli & Cario* 2335, collected in Guatemala between San Martín Sacatepéquez and Las Mercedes, Quezaltenango. We have not seen type material, but Bitter's description evidently relates to a plant common in moist or wet, mountain forests of the departments of Quezaltenango and San Marcos. In Guatemala we have made more than 20 collections of it, which illustrate its slight variations. It is represented also by *Purpus*

6671 from Boquerón, Chiapas, Mexico. Bitter had only flowering branches, and so was uncertain as to the generic position of the plant, but he placed it in *Saracha*, suggesting, however, that it might actually represent a distinct and new genus, for which he suggested but did not properly publish the name *Heterosaracha*. He would have been greatly surprised if he had seen the flowers develop into fruits, for the fruits are exactly those of *Physalis*, and in no way resemble fruits of *Saracha*.

The ample material of this and related forms now at hand represents a group of plants common in various regions of Guatemala. We are describing on the following pages three segregates that seem to represent valid species, differing constantly in the pubescence and lobing of the calyx. There is some basis for treating these plants as a distinct and new genus. They are all very large, tall, coarse, soft-stemmed herbs that in habit and general appearance, when growing, do not at all suggest *Physalis*. The corolla is rotate or nearly so, deeply lobate and not plicate, densely pubescent outside and within, and densely lanate or tomentose in the throat. The flowers are all or nearly all fasciculate, while in *Physalis* proper they are solitary. It would be safe and reasonable to treat these species as constituting a separate genus if it were not for a group of three other species that are more or less intermediate between them and typical *Physalis*. The latter species are *Physalis melanocystis* (Robinson) Bitter of San Luis Potosí, *P. mayana* Standl. of the Yucatan Peninsula and Veracruz, and, probably, *P. porphyrophysa* Donn. Smith, of Zacapa, Guatemala, the last known only from fruiting specimens. *P. porphyrophysa* is a woody vine, and the other two species mentioned also are decidedly ligneous. All these three species have fasciculate flowers, but the corolla is somewhat campanulate (so far as it is known), and not at all like that of *Physalis amphitricha*. *P. melanocystis* was referred by Robinson with question to *Withania*, an Old World genus from which it differs little and perhaps only in geographic distribution. Although the shape of the corolla has been much used as a basis for separating genera in the Solanaceae, and is a quite satisfactory character in some cases, it is highly variable and not always dependable. It therefore seems necessary, for the present at least, to leave all the species mentioned here in *Physalis*. They could be separated on the basis of their fasciculate rather than solitary flowers, but this alone does not seem sufficient basis for a generic segregation, although it is more definite than the characters on which many of the genera of Solanaceae are based, and probably does indicate a homogeneous group of some taxonomic importance.

Physalis amica Standl. & Steyerm., sp. nov.—Herba ramosa erecta ca. 1.5 m. alta, caulibus crassiusculis dense sordido-villosis; folia petiolata herbacea, petiolo 7–12 mm. longo dense villosulo; lamina ovata vel elliptico-ovata interdum rhombeo-ovata vulgo 4–8 cm. longa atque 2–4.5 cm. lata, acuta vel breviter acuminata, basi plus minusve obliqua acuta vel abrupte acuta, angulato-dentata vel subintegra, utrinque sat dense pilis crassiusculis plurilocularibus villosa; pedicelli fasciculati ca. 8 mm. longi superne incrassati dense breviter villosuli; calyx 6–8 mm. longus campanulatus dense breviterque villosulus fere ad medium 5-lobus, lobis ovatis acutis vel acuminatis; corolla pallide luteo-viridis ca. 2.5 cm. lata fere rotata, tubo lato brevi, extus intusque dense viscido-puberula, fauce dense villosa vel tomentosa, profunde 5-loba, lobis ovatis obtusis vel acutis; filamenta longa gracilia superne glabra, antheris filamentis duplo brevioribus ca. 3 mm. longis oblongis; calyx fructifer non visus.—Guatemala: Dept. San Marcos: Along stream in moist or wet forest, 2,500–3,000 meters, between La Vega ridge and northeast slopes of Volcán de Tacaná, along Río Vega, February 20, 1940, *Julian A. Steyermark* 36175 (type in Herb. Field Mus.).

Apparently a rare plant, and only one collection of it was made. In most respects it is like *P. amphitricha* but is distinguished by its densely villosulous rather than glabrous calyx, and by the abundant pubescence on all vegetative parts.

Physalis calidaria Standl. & Steyerm., sp. nov.—Herba 1–1.5 m. alta erecta vel laxa et adscendens ramosa, caulibus gracilibus dense breviterque villosulis; folia petiolata membranacea, petiolo vulgo 1–2 cm. longo dense villosulo; lamina ovata vel elliptica 6–17 cm. longa 3–8 cm. lata acuminata vel longiacuminata, basi acuta vel obtusa et abrupte acuminata vel decurrens, supra viridis sparse villosa, subtus pallidior sat dense villosa; inflorescentiae umbelliformes pauciflorae sessiles vel brevissime pedunculatae, pedicellis gracillimis 10–15 mm. longis, villosulis vel puberulis; calyx late campanulatus ca. 3 mm. altus et 5 mm. latus dense viscido-puberulus vel villosulus, margine subintegro vel brevissime 5-lobo, lobis latissime rotundatis vel subtruncatis; corolla rotata pallide luteo-virescens ca. 2.5 cm. lata extus intusque dense viscido-puberula, fauce dense villoso-lanosa, profunde 5-loba, lobis late ovatis ca. 8 mm. longis atque 6 mm. latis obtusis vel acutiusculis; filamenta gracillima glabra antheris fere duplo longiora, antheris ovalibus fere 3 mm. longis; calyx fructifer ca. 2.5 cm. latus et aequilongus obtuse 5-angulatus basi depressus glaber vel glabratus, pallide viridis, conspicue retic-

ulato-venosus, venis elevatis.—Guatemala: Dept. Quezaltenango: Fuentes Georginas, west slope of Volcán de Zunil, in wet mixed forest, alt. about 2,850 meters, March 4, 1939, *Paul C. Standley* 67488 (type in Herb. Field Mus.); same locality, 2,300–2,500 meters, February 3, 1941, *Standley* 85932, 85892, 85885. Dept. San Marcos: Volcán de Tajumulco, between Todos Santos and Finca El Porvenir, 1,300–3,000 meters, March, 1940, *Steyermark* 36988.

From *P. amphitricha* this species differs in its densely pubescent and subtruncate calyx; from *P. amica* in its subtruncate calyx.

Physalis chimalteca Standl. & Steyerm., sp. nov.—Herba vel suffrutex ramosus erectus vel adscendens 1.5–2.5 m. altus, caulibus sparse pilis laxis vel subadpressis villosis vel fere glabris; folia petiolata membranacea, petiolo vulgo 1.5–4 cm. longo sparse villosulo vel glabro; lamina ovata usque elliptica vel late elliptica vulgo 5–11 cm. longa atque 3–8.5 cm. lata acuta usque acuminata, apice ipso obtuso, basi acuta usque obtusa vel subrotundata, plus minusve angulata vel undulato-dentata vel subintegra, supra viridis sparsissime pilis brevibus crassis villosula, subtus pallidior, sparse pilis crassis pluri-locularibus praesertim prope costam villosula; inflorescentiae umbelliformes pauciflorae sessiles, pedicellis plerumque ca. 12 mm. longis superne incrassatis glabris vel glabratis; calyx late campanulatus ca. 4.5 mm. altus et 6.5 mm. latus glaber vel glabratus, margine ciliato undulato 5-lobatus, lobis brevissimis apiculatis vel subtruncatis; corolla pallide lutescenti-viridis vel albido-viridescens ca. 2 cm. lata rotata extus intusque dense viscido-puberula, fauce dense villoso-lanosa, ca. 15 mm. longa, profunde 5-loba, lobis ovatis vel triangularibus acutis vel acuminatis; filamenta antheris plus quam duplo longiora glabra, antheris ovalibus 2.5 mm. longis vel paullo ultra; calyx fructifer non visus.—Guatemala: Dept. Chimaltenango: Slopes of Volcán de Acatenango, above Las Calderas, in dense wet *Chiranthodendron* forest, alt. 2,400–2,700 meters, January 3, 1939, *Paul C. Standley* 61803 (type in Herb. Field Mus.), 61965; Volcán de Acatenango, 2,400 meters, February, 1907, *W. A. Kellerman* 6610. Dept. Quiché: San Miguel Uspantán, April, 1892, *Heyde & Lux* 3435 (probably referable here).

Resembling *P. amphitricha* in its glabrous calyx but in that species the calyx is deeply lobate, with ovate lobes. Both *P. amica* and *P. calidaria* are distinguished by their densely pubescent calyces.

Solanum alpicum Standl. & Steyerm., sp. nov.—Herba perennis, interdum acaulis, caulibus interdum elongatis et usque ad 25 cm.

longis, solitariis vel pluribus, sparse pilis longis laxis albis plurilocularibus villosis, radicibus sine dubio tuberiferis, tuberibus non visis; folia pinnata vel infima radicalia simplicia, 3–5-foliolata longipetiolata vulgo 5–10 cm. longa, interdum in plantis caulescentibus multo longiora, rhachi nuda vel anguste alata sparse albo-villosa; foliola valde inaequalia, inferioribus sensim decrescentibus, foliolo terminali elliptico, ovali vel elliptico-ovato 3–11 cm. longo et 1.5–6 cm. lato, lateralibus duplo brevioribus vel minoribus, foliolis omnibus membranaceis integris, obtusis vel acutis, utrinque subtus densius pilis longis albidis plurilocularibus crassiusculis villosis, basi acutis vel subrotundatis obtusisve atque abrupte contractis, sessilibus; inflorescentiae 1–pauciflorae foliis breviores, pedicellis gracillimis usque ad 3.5 cm. longis, vulgo duplo brevioribus, dense albo-villosis, supra medium articulatis; calyx ca. 4 mm. longus viridis profunde lobatus, sat dense villosus, segmentis ovatis acuminatis; corolla purpurea vel alba 15–18 mm. longa extus sparse albo-villosa, limbo ut videtur 5-angulato; antherae luteae; bacca globosa glabra 1–1.5 cm. diam. apice late rotundata.—Guatemala: Dept. Huehuetenango: Cerro Chémal, summit of Sierra de los Cuchumatanes, alt. 3,700–3,800 meters, August 8, 1942, *Julian A. Steyermark* 50303 (type in Herb. Field Mus.); vicinity of Chémal, 3,700 meters, August 8, 1942, *Steyermark* 50247; near Chémal, 3,300 meters, September, 1941, *John R. Johnston* 1969; alpine areas, vicinity of Tunimá, Sierra de los Cuchumatanes, July, 1942, *Steyermark* 48369.

This plant is obviously related to *S. demissum* Lindl., a species of the mountains of central and southern Mexico, and it is not certain that the two are distinct. The Mexican material available for comparison is unsatisfactory, but, if one may depend upon the descriptions of *S. demissum*, the Guatemalan plant is distinct, as one might expect from its isolated range and the very high elevation at which it occurs. Three of the collections consist of plants that are acaulescent or nearly so, while one consists of luxuriant caulescent plants about 25 cm. high or larger, which probably grew in a protected place. The region where the species grows is an alpine one, where below-freezing temperatures are common during the winter months of the North, and probably throughout the year. The plant is, of course, a relative of *Solanum tuberosum*, and it is curious to note that in the Chémal region the only agriculture is potato growing. This, however, is a coincidence. While most of the leaves in *S. alpicum* are pinnate, the earliest leaves of the rosette-like clusters are simple and long-petiolate, the succeeding ones bearing only a few very greatly reduced leaflets on the upper part of the petiole.

Solanum fontium Standl. & Steyerm., sp. nov.—Frutex 2–3-metralis omnino glaber ramosus, ramis vetustioribus insigniter elevato-lenticellatis; folia modica petiolata membranacea solitaria vel 2–3-nata integra, petiolo crassiusculo 1–3 cm. longo; lamina lanceolato-oblonga medio vel prope basin latissima 7.5–20 cm. longa, 3–7 cm. lata, acuminata, basi inaequali obtusa vel subrotundata vel acuta, subtus non barbata, nervis lateralibus utroque latere ca. 11 arcuatis; inflorescentia oppositifolia pedunculata, vulgo furcata sed interdum simpliciter umbellata, pauci- vel multiflora, pedicellis glabris usque 15 mm. longis; calyx campanulatus 3 mm. longus glaber brevissime lobatus vel dentatus, dentibus obtusis; corolla alba extus glabra ca. 6–7 mm. longa fere ad basin lobata, lobis ovato-oblongis obtusis; antherae late oblongae 3 mm. longae; ovarium glabrum; baccae non visae.—Guatemala: Dept. Quezaltenango: Wet forest, Fuentes Georginas, western slope of Volcán de Zunil, alt. 2,850 meters, March 4, 1939, *Paul C. Standley* 67473 (type in Herb. Field Mus.); also no. 67492 with the same data; and from the same locality, February, 1941, *Standley* 85928. Dept. San Marcos: Wet forest along road above Barranco Eminencia, alt. 2,700 meters, *Standley* 68502.

Related, evidently, to *S. Rovirosanum* Donn. Smith, but apparently fully distinct in its narrow leaves of different shape, with much more acute or acuminate apex.

Solanum huehuetecum Standl. & Steyerm., sp. nov.—Fruticulus ca. 30 cm. altus ramosus, inferne lignosus superne herbaceus, ramis gracilibus sparse denseve stellato-pubescentibus; folia alterna vel opposita subaequalia petiolata membranacea, petiolo gracillimo 7–15 mm. longo stellato-pubescente; lamina ovata vel lanceolato-ovata, interdum deltoideo-ovata, vulgo 3–5 cm. longa et 1–2 cm. lata, acuta vel acuminata, apice ipso obtuso, basi rotundata vel obtusissima, supra viridis sparse pilis brevibus simplicibus pilosa, subtus concolor sparse vel dense pilis albidis stipitatis pauciradiatis stellato-pilosa, nervis lateralibus utroque latere 4–5, integra; inflorescentiae extra-axillares pauciflorae sessiles vel subsessiles, pedicellis gracillimis plerumque 2–2.5 cm. longis sparsissime stellato-pubescentibus vel glabris; calyx viridis campanulatus basi acutus 3 mm. longus sparse stellato-puberulus fere ad medium 5-lobatus, lobis ovatis obtusis vel acutis dorso 1-costatis; corolla alba stellato-campanulata extus glabra ut videtur ca. 6–7 mm. longa (perfecta non visa) ad medium 5-loba, lobis angustis attenuatis; antherae fere sessiles oblongae ca. 3.5 mm. longae, antheris omnibus aequalibus;

bacca globosa glabra ca. 8 mm. diam., apice late rotundata.—Guatemala: Dept. Huehuetenango: Above Democracia on trail to Jutal, alt. 1,000 meters, August 23, 1942, *Julian A. Steyermark* 51039 (type in Herb. Field Mus.).

We are unable to suggest a close relative for this species, which has no particularly outstanding characters but at the same time is not at all similar to any other known from Central America.

SCROPHULARIACEAE

Tetranema roseum (Mart. & Gal.) Standl. & Steyerm., comb. nov. *Episcia rosea* Mart. & Gal. Bull. Acad. Brux. 9, pt. 2: 39. 1842. *T. mexicanum* Benth. ex Lindl. Bot. Reg. *pl. 52.* 1843. *Allophyton mexicanum* Pennell, Proc. Acad. Nat. Sci. Phila. 77: 271. 1925.—The name *Episcia rosea* is not mentioned by Pennell in his account of this genus (loc. cit.), but it is listed by Hemsley in *Biologia Centrali-Americana* as a synonym of *T. mexicanum.* The type collection of *Episcia rosea* (Galeotti 1905) is listed by Bentham in his account of *Tetranema* (DC. Prodr. 10: 331. 1846), although he does not cite the name applied to the same collection by Martens and Galeotti.

BIGNONIACEAE

Pseudocalymma Standleyi Steyermark, sp. nov.—Frutex scandens, ramis teretibus ochraceis, junioribus obtuse tetragonis vel subteretibus viridibus glabris; folia magna 2.5–4 cm. longe petiolata; foliola 2 crasse chartacea vel subcoriacea 1.5–2 cm. longe petiolulata late elliptica vel ovato-elliptica 15–18 cm. longa 9–11 cm. lata abrupte breviter acuminata, basi obtusa vel subrotundata, glabra, subtus paullo pallidiora basi in axillis nervorum basalium dense impresso-glandulosa, e basi trinervia, nervis lateralibus utroque latere ca. 6, venis prominulis laxe reticulatis; inflorescentiae axillares vel laterales thyrsoideae 18–27 cm. longae 6–8 cm. latae multiflorae, ramis compressis glabris, floribus longipedicellatis; calyx late campanulatus et subinflatus crasse membranaceus 15–23 mm. longus 15–21 mm. latus, glaber, margine brevissime 5-lobo, lobis subinaequalibus vix ultra 2.5 mm. longis 4–7 mm. latis; corolla pallide purpurea ca. 7 cm. longa, tubo extus glabro 4.7 cm. longo 2 cm. lato, lobis ovato-rotundis apice rotundatis 2.3 cm. longis 2.2 cm. latis, extus glanduloso-lepidotis; stamina inclusa, filamentis glabris; antherae glabrae, loculis divaricatis 4.5–4.8 mm. longis; discus annularis; ovarium oblongum minute glanduloso-lepidotum.—Guatemala: Dept. Quezaltenango: Between

Finca Pirineos and Finca Soledad, lower southern slopes of Volcán de Santa María, between Santa María de Jesús and Calahuaché, alt. 1,300–1,400 meters, January 5, 1940, *Julian A. Steyermark* 33533 (type in Herb. Field Mus.).

Local name "bejuco de ajo," a term given commonly to the various vines of this family having a strong alliaceous odor. Its large and somewhat inflated calyx distinguishes this plant from the North American species of the genus. It probably is more nearly related to *P. alliaceum* (Lam.) Sandwith, of the Guianas and Brazil, of which we have seen no material. As described, that has a smaller calyx and a much smaller corolla. A striking character of *P. Standleyi* is the numerous large impressed glands on the lower leaf surface in the axils of the basal nerves.

GESNERIACEAE

Solenophora abietorum Standl. & Steyerm., sp. nov.—Planta terrestris herbacea vel suffrutescens erecta vel decumbens simplex vel sparse ramosa 50 cm. alta et ultra, caule obtuse tetragono sparse denseve pilis longis laxis albidis multilocularibus villoso; folia opposita subaequalia longipetiolata herbacea, petiolo gracili 3–3.5 cm. longo laxe villoso; lamina elliptica vel ovato-elliptica, interdum ovata vel obovato-elliptica 5.5–9.5 cm. longa 3–5.5 cm. lata, acuta vel breviter acuminata, basi paullo inaequali rotundata vel obtusa, subadpresse serrato-dentata, supra viridis densissime pilis laxis villosa, subtus saepe vinacea ad nervos venasque dense laxeque villosa, nervis lateralibus utroque latere ca. 7; pedicelli axillares solitarii 1–2.5 cm. longi dense villosi; calyx 12–17 mm. longus late campanulatus viridis dense villosus, tubo campanulato ca. 4 mm. longo, limbo breviter 5-lobo, lobis subrotundatis semiorbicularibus 3–4 mm. longis integris vel obsolete denticulatis; corolla lutea 3.5–4 cm. longa vel paullo ultra extus sparse villosa vel fere glabra, tubo superne sensim ampliato fauce non contracto et ca. 1 cm. lato, limbo ca. 3–3.5 cm. lato intus ad faucem sparse villosulo, subregulari, brevissime lobato; filamenta glabra; stylus villosulus.—Guatemala: Dept. Huehuetenango: Cerro Huitz, between Mimanhuitz and Yulhuitz, Sierra de los Cuchumatanes, alt. 1,500–2,600 meters, July 14, 1942, *Julian A. Steyermark* 48643 (type in Herb. Field Mus.); also no. 48637, with the same data; in cloud forest with *Abies guatemalensis*, Cerro Cananá, between Nucapuxlac and Cananá, Sierra de los Cuchumatanes, 2,500–2,800 meters, July 18, 1942, *Steyermark* 49067.

The plant represents a species very different from the others known in Guatemala, and we have been unable to find a close ally among any of the Mexican or other Central American species. The large, bright yellow corollas are marked inside with interrupted brown lines or dashes.

ACANTHACEAE

Aphelandra gigantiflora Lindau, f. **lutea** Standl. & Steyerm., f. nov.—A forma typica speciei non nisi corollis intense luteis differt. —Guatemala: Dept. Escuintla: Wooded barranco of Río Gavilán, northeast of Escuintla, alt. 720 meters, March 16, 1941, *Paul C. Standley* 89560 (type in Herb. Field Mus.).

A shrub 1.5 meters high; corollas deep yellow. *Aphelandra gigantiflora* is a rather common and handsome shrub in the Guatemalan foothills near the Pacific coast, and numerous collections have been made of it there. Invariably, except for this single collection, it has been found to have brilliant deep red corollas. In other Central American Acanthaceae the color of the corolla is constant except for minor variations in intensity. One would normally expect that a yellow-flowered plant would be specifically distinct from *A. gigantiflora*, but we find no other differences between this color variant and the rest of the Central American specimens.

Carlowrightia myriantha Standl., comb. nov.—*Justicia myriantha* Standl. Field Mus. Bot. 8: 45. 1930.

Beloperone montana Standl. & Leonard, sp. nov.—Herba decumbens, caulibus adscendentibus dense bifariam villosis, pilis fulvis patulis; lamina foliorum elliptico-ovata, obtusa vel acutiuscula, apice ipso obtuso, basi angustata in petiolum decurrens, integra, supra subdense pilosula, pilis curvatis, subfulvis, subtus purpurea, adpresso-pilosula; spicae breves erectae in paniculam terminalem angustam aggregatae, rhachibus dense subquadrifariam fulvo-villosis; bracteae oblongo-spathulatae, hirsutae, pilis subflavis, plerisque marginalibus; calycis segmenta lineari-subulata, tenuia, subhyalina, dense pilosa, pilis rectis patulis plerisque marginalibus; corolla purpurea, labio superiore oblongo brevi bilobato, inferiore ovato trilobato, lobis rotundatis; capsulae clavatae, hirtellae, pilis apicem versus patulis, basin versus retrorsis.

Decumbent herb up to 25 cm. long or more; stems ascending, often rooting at the lower nodes, densely villous in 2 lines, the hairs

more or less matted, light yellowish brown, spreading, up to 2 mm. long, the cystoliths numerous, subpunctiform; leaf blades elliptic-ovate, up to 11 cm. long and 6.5 cm. wide, obtuse or acutish, narrowed at base and decurrent on the petiole, membranaceous, entire,

FIG. 1. *Beloperone montana* Standl. & Leonard, sp. nov. (*Steyermark* 41939): *a*, plant; *b*, bracts; *c*, calyx segment; *d*, hair from bract; *e*, anther and portion of filament (*a*, × ½; *b*, *c*, × 2; *d*, about × 15; *e*, about × 4).

the cystoliths 0.25 to 0.5 mm. long, straight, fairly conspicuous on the upper surface, absent beneath; upper surface dark green (*teste* Steyermark), rather densely pilosulous, the hairs curved, brownish, up to 1 mm. long, the costa and lateral veins (5 or 6 pairs) slightly raised; lower surface purple with green margins (*teste* Steyermark), rather uniformly appressed-pilosulous, the hairs curved, 0.5 mm. long or less; petioles about 1 cm. long, densely villous except in the open channels, the cystoliths numerous, subpunctiform; flowers borne in a narrow terminal pedunculate panicle up to 15 cm. long and 3 cm. broad, consisting of short erect spikes up to 3 cm. long and 1 cm. broad; rachis densely villous, the hairs up to 2 mm. long, yellowish

brown, disposed more or less in 4 lines; bracts in 3's, pale green (*teste* Steyermark), oblong-spatulate, the middle one 13 mm. long, 4 mm. wide near the middle, the lateral ones 12 mm. long and 2 mm. wide, all rounded at apex, narrowed to a flat base 1.5 mm. wide, rather prominently veined, hirsute, the hairs up to 2 mm. long, yellowish brown, confined chiefly to the margins and veins; calyx 8 mm. long, the segments linear-subulate, thin, subhyaline, rather densely pilose, the hairs up to about 1 mm. long; corolla dark and pale purple (*teste* Steyermark), about 5 mm. long (immature), the upper lip oblong, shallowly 2-lobed, the lower lip ovate, 3-lobed, the lobes rounded; anther sacs parallel, about 2 mm. long, one attached slightly above the other, the upper one acute at base, the lower one appendaged, the tail slightly less than 0.5 mm. long; capsule 1 cm. long, 4 mm. broad, abruptly pointed at apex, narrowed from about the middle to a flattened stipitate solid base 2 to 2.5 mm. broad, hirtellous, the hairs 0.5 mm. long, spreading or ascending toward the tip, those of the lower portions retrorse; seeds (immature) light brown, flattened; retinacula about 2 mm. long, rounded or obtuse at tip.—Guatemala: Dept. Izabal: On uppermost summit of Cerro San Gil, alt. 1,200–1,300 meters, December 26–27, 1941, *Julian A. Steyermark* 41939 (type in Herb. Field Mus.).

Closely related to *Beloperone Brenesii* Leonard, of Costa Rica, differing chiefly in its much larger leaf blades, relatively shorter petioles, and much larger inflorescences. Plants of *B. Brenesii* are taller (up to 40 cm. high or more), the leaf blades 5 cm. long and 3 cm. wide or less, and the flowers borne in a terminal spike or thyrse up to 10 cm. long and usually not exceeding 4 cm. The pubescence and the shape and arrangement of the bracts are very similar in the two species.

Dicliptera guttata Standl. & Leonard, sp. nov.—Frutex diffusus vel suffrutex grandis diffusus, caulibus subhexagonis pubescentibus, pilis curvatis; lamina foliorum ovata vel oblongo-ovata, breviter acuminata, apice ipso obtuso, basi angustata, in petiolum decurrens, membranacea, integra, hirsutula; petioli graciles, parce pubescentes; cymae axillares et terminales, sessiles vel breviter pedunculatae, compactae, compositae, cymae primariae bracteis subulatis dense ciliatis suffultae, cymae secundariae bracteis inaequalibus, longioribus obovatis, brevioribus oblongis, ambobus subobtusis vel subacutis apice apiculatis, viridibus et purpureo-maculatis, dense ciliatis suffultae; bracteae floriferae lineares, dense ciliatae; calycis segmenta anguste linearia, ciliata; corolla purpurea,

tenuiter pubescens, labio superiore integro, inferiore brevissime trilobo; capsulae ovales, planae, hirtellae, pilis erectis vel retrorsis.

Sprawling shrubs or large suffrutescent herbs up to 1 meter high or more; stems dull green, subhexagonal, pubescent, the hairs up to 0.75 mm. long, variously curved; leaf blades ovate to oblong-ovate, up to 10 cm. long and 4 cm. wide, acuminate (the tip itself blunt),

FIG. 2. *Dicliptera guttata* Standl. & Leonard, sp. nov. (*Steyermark* 42396): *a*, portion of stem; *b*, inflorescence; *c*, bract subtending the primary cyme; *d*, *e*, bracts subtending the secondary cymes; *f*, bract subtending a flower; *g*, calyx; *h*, upper portion of corolla; *i*, expanded capsule (*a*, *b*, × ½; *c*–*i*, × 1).

narrowed at base and decurrent on the petiole, membranous, entire, the cystoliths of both surfaces scattered, inconspicuous, 0.25 to 0.5 mm. long, the upper surface grass-green (*teste* Steyermark), hirsutulous, the hairs up to 0.75 mm. long, appressed or subappressed, or the costa pubescent with small curved hairs, both costa and lateral veins (6 or 7 pairs) slightly raised, slender but rather prominent, the lower surface pale dull green (*teste* Steyermark), rather coarsely hirsutulous, especially on the veins, the hairs up to 0.75 mm. long, straight or curved; petioles slender, up to 5 cm. long, sparingly pubescent; flowers borne in crowded, compound, terminal or axillary cymes up to 2.5 cm. long and 3 cm. broad, these subsessile or borne on pubescent

peduncles up to 1 cm. long, the hairs white, straight or curved, up to 1 mm. long, the primary cymes composed usually of 3 secondary cymes, these in turn composed of 2, 3, or more subsessile flowers; bracts subtending the primary cymes subulate, 6 mm. long, 1 mm. wide at base, ciliate; bracts subtending the secondary cymes unequal, one obovate, 14–16 mm. long, 10 mm. wide, the other oblong, 10–12 mm. long and 3–4 mm. wide, both obtusish, apiculate, narrowed at base, pubescent and ciliate, dull green and (especially the larger of the two) bearing conspicuous magenta-brown specks and mottlings in their upper third; bracts subtending the flowers linear, 1 cm. long, 1.5 mm. wide, sharply acuminate, sparingly pilose and ciliate, the marginal hairs 1–1.5 mm. long, those on the flat surfaces shorter; calyx 8 mm. long, the segments 6–7 mm. long, subulate, ciliate, the hairs straight and spreading, both the calyx segments and inner bracts subhyaline; corolla "rose-purplish-orchid" (*teste* Steyermark), finely pubescent, 2.5 cm. long, about 2 mm. broad at base, narrowed to 1 mm. at tip of ovary, thence gradually enlarged to a cylindric tube 3.5 mm. broad at mouth, the lips subequal, oblong, 6–8 mm. long, the upper one about 4 mm. wide, entire, the lower 3 mm. wide, minutely 3-lobed; capsule oval, flattened, 6 mm. long, 3 mm. broad, 1.5 mm. thick near base and narrowed to 1 mm. toward the obtuse mucronate tip, sparingly hirtellous, the hairs straight, those near the tip erect, the others retrorse; mature seeds not seen; retinacula 1.5 mm. long, 0.5 mm. thick at base, abruptly narrowed to a subulate tip.—Guatemala: Dept. Zacapa: Along Rillito del Volcán de Monos, Sierra de las Minas, alt. 1,150–2,100 meters, January 10, 1942, *Julian A. Steyermark* 42396 (type in U. S. Nat. Herb., no. 1,843,435; isotype in Herb. Field Mus., no. 1,153,510).

This species has apparently no close relatives in Central America. The name alludes to the peculiar purple-spotted bracts.

Jacobinia umbrosa (Benth.) Blake, f. **erythrantha** Standl. & Steyerm., f. nov.—A forma typica speciei differt corollis intense rubris, non luteis.—Guatemala: Dept. Chimaltenango: Moist forest, above Las Calderas, alt. 1,800–2,100 meters, December 15, 1938, *Paul C. Standley* 60082 (type in Herb. Field Mus.); same locality, October 25, 1937, *John R. Johnston* 1108.

In the typical form of this species, which is a common, somewhat weedy plant in many parts of southern Mexico and Central America, the large corollas are bright yellow and very showy. So far as we are able to determine, this red-flowered plant differs only in the coloring of its flowers.

Justicia alsophila Standl. & Leonard, sp. nov.—Herba debilis, caulibus decumbentibus, teretibus vel apicem versus subquadrangularibus, bifariam pubescentibus, pilis sordidis retrorsis, nodis infimis radicantibus; lamina foliorum ovata vel elliptica, subobtusa, basi cuneata, in petiolum decurrens, tenuis, supra glabra, subtus in costa parce hirtella; petioli graciles, incurvo-puberuli; flores axillares, solitarii, subterminales; bracteae foliaceae, membranaceae, ellipticae

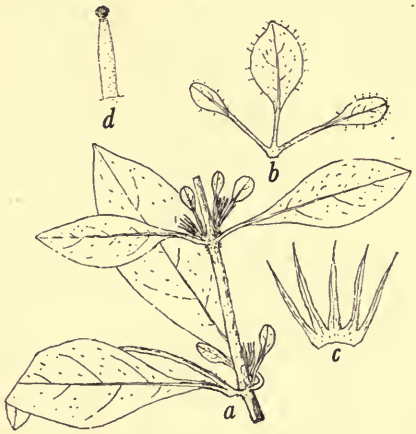

FIG. 3. *Justicia alsophila* Standl. & Leonard, sp. nov. (*Steyermark* 48884): *a*, portion of stem; *b*, bracts; *c*, calyx; *d*, hair from bract (*a*, × 1; *b*, × 2; *c*, about × 3; *d*, about × 60).

vel obovatae, unguiculatae, parce glanduloso-pilosae; calyx glaber, segmentis subulatis; corolla et capsula ignotae.

Weak decumbent herbs up to 25 cm. long; stems moderately branched, rooting at lower nodes, terete or subquadrate toward tip, pubescent in two lines, the hairs sordid, retrorsely curved, 0.5 mm. long or less, the cystoliths numerous, linear (0.25–0.5 mm. long) or subpunctiform at the nodes, inconspicuous; leaf blades ovate to elliptic, 1–3.5 cm. long, 5–20 mm. wide, obtusish at apex, cuneate at base and decurrent on the petiole, membranous, the cystoliths numerous, about 0.3 mm. long, whitish, conspicuous on both surfaces; upper surface glabrous, olive-green, the costa and lateral veins (3–4 pairs) not elevated, inconspicuous; lower surface olive-brown, glabrous except the sparingly hirtellous costa; petioles slender, up to 1.5 cm. long, sparingly incurved-puberulous, the hairs about 0.5 mm. long; flowers solitary, borne in the axils of the upper leaves; bracts leaflike, membranous, elliptic to obovate, the middle bract about 8 mm. long and 3 mm. wide, the lateral ones about 7 mm. long and 1.5 mm. wide, all unguiculate, narrowed to a slender petiole-like base, sparingly glandular-pilose, the hairs spreading,

0.25 mm. long; calyx 4.5 mm. long, glabrous, the segments 5, subulate, 3.5 mm. long, 0.75 mm. wide at base; corollas and capsules not seen.—Guatemala: Dept. Huehuetenango: In steep rocky wet forest of a ravine southwest of Maxbal, about 17 miles north of Barillas, Sierra de los Cuchumatanes, alt. 1,500 meters, July 15–16, 1942, *Julian A. Steyermark* 48884 (type in U. S. Nat. Herb., no. 1,843,505; isotype in Herb. Field Mus., no. 1,147,110). A paratype was collected on the same date by Steyermark (no. 48705) in woods near a lake about 2 miles southeast of Maxbal. Specimens of this are in the U. S. National Herbarium (no. 1,843,504) and in the Herbarium of Field Museum (no. 1,147,108).

Apparently unrelated to any Central American member of the genus. No trace of a corolla is to be found in the specimens examined. Whether the flowers are cleistogamous and thus inconspicuous or the corollas are early deciduous must be left to conjecture at present. There is also the possibility that the plants from which the specimens were collected had failed to develop normal flowers because of an uncongenial habitat.

Justicia Steyermarkii Standl. & Leonard, sp. nov.—Suffrutex, caulibus ramosis teretibus vel apicem versus subquadrangularibus, subbifariam fulvo-puberulis; lamina foliorum oblongo-lanceolata, acuminata, apice ipso obtuso, basi angustata, in petiolum breviter decurrens, integra vel undulata, supra fulvo-hirtella, subtus subglabra; flores axillares, solitarii et subterminales, vel in spicam brevem axillarem subterminalem dispositi; bracteae foliaceae, oppositae, spathulatae, rotundatae, basi angustatae, tenues; calycis segmenta parce hirtella, ciliolata; corolla parce pubescens, labio superiore emarginato, inferiore anguste ovato, purpureo-maculato, trilobato, lobis rotundatis; ovarium parce et minute pubescens, pilis rectis, retrorsis; capsula ignota.

Suffrutescent herbs up to 1.5 meters high; stems branched, terete or the tips subquadrangular, puberulous, the hairs yellowish-brown, about 0.25 mm. long, upwardly curved, mostly disposed in 2 rows; leaf blades oblong-lanceolate, up to 6 cm. long and 2 cm. wide, acuminate, gradually narrowed from middle or lower third to the blunt tip, narrowed at base and short-decurrent on the petiole, entire or undulate, the cystoliths about 0.3 mm. long, very inconspicuous, more numerous on the lower surface than on the upper, the upper surface dull dark green (*teste* Steyermark), sparingly hirtellous or the costa densely so, the hairs about 0.3 mm. long, straight or curved, spreading or appressed, brownish; lower surface

subglabrous, light olive green, the costa and lateral veins (5 or 6 pairs) raised, more conspicuous than above; petioles slender, up to 1 cm. long, densely puberulous, the hairs yellowish brown, upwardly curved; flowers axillary, solitary, and subterminal, or borne on short spikes at or near the tips of the numerous branches, subsessile or borne on short peduncles up to 3 mm. long, these densely brown-puberulous with upwardly curved hairs; bracts opposite, spatulate,

FIG. 4. *Justicia Steyermarkii* Standl. & Leonard, sp. nov. (*a*, *Steyermark* 48590; *b*, *c*, *d*, *Steyermark* 48934): *a*, portion of branch; *b*, bract; *c*, segment of calyx; *d*, anther and portion of filament (*a*, × 1; *b*, *c*, about × 2; *d*, about × 3).

about 1 cm. long, 3 mm. wide, rounded at tip, narrowed into a slender petiole-like base about 6 mm. long, the texture and pubescence like that of the leaf blades; calyx 7 mm. long, the segments subulate, 6 mm. long, 1 mm. wide at base, gradually narrowed to a slender tip, sparsely hirtellous, ciliolate; corolla 2 cm. long, sparingly pubescent (hairs spreading or retrorse, 0.25 mm. long), the upper lip whitish gray outside, dull purple within, the lower lip white, marked by 3 broken bands of dull purple, the spots becoming small toward the tip (*teste* Steyermark), the corolla tube about 3.5 mm. broad at base, gradually enlarged to 5 mm. at throat, the upper lip ovate, about 1 cm. long and 7 mm. wide, rounded and emarginate at tip,

the lower lip slightly shorter and narrower than the upper, 3-lobed at apex, the lobes rounded, about 2 mm. long; stamens slightly exserted, the anther lobes obliquely inserted, one slightly above the other, the ventral margins bearded, the basal tail of the upper lobe minute, subulate, that of the lower about 0.5 mm. long, blunt at tip, the connective thin, about 0.75 mm. wide; ovary sparingly and minutely pubescent, the hairs straight, retrorse; capsules and seeds not seen.—Guatemala: Dept. Huehuetenango: Between Xoxlac and Nucapuxlac, Sierra de los Cuchumatanes, alt. 1,650–2,500 meters, July 17, 1942, *Julian A. Steyermark* 48934 (type in U. S. Nat. Herb., no. 1,843,506; isotype in Herb. Field Mus., no. 1,153,502). A paratype (U. S. Nat. Herb., no. 1,843,502; Herb. Field Mus., no. 1,153,529), was collected in the same general locality on Cerro Huitz, between Mimanhuitz and Yulhuitz, alt. 1,500–2,600 meters, July 14, 1942, *Steyermark* 48590.

Related to *Justicia multicaulis* Donn. Smith, but easily separated by its larger leaf blades, denser pubescence, and much larger corollas. The corollas of *J. multicaulis* are rarely over 12 mm. long and their tubes are very slender and scarcely over 1 mm. broad. The bracts of the two species are strikingly similar.

Mendoncia guatemalensis Standl. & Steyerm., sp. nov.—Scandens suffrutescens, caule subtereti dense pilis fulvis subadpressis pubescente; folia petiolata firme membranacea, petiolo 1.5–2 cm. longo adpresso-pilosulo; lamina elliptica 7.5–11.5 cm. longa 4–6 cm. lata subito longiacuminata, basi rotundata et interdum abrupte breviter decurrens, supra viridis sparsissime adpresso-pilosula vel glabrata, ad costam dense adpresso-pilosula, subtus paullo pallidior ubique sat dense pilis fulvis adpressis pilosula, nervis lateralibus utroque latere 4–5; pedicelli vulgo geminati crassiusculi in statu fructifero 10–14 mm. longo adpresso-pilosuli; bracteolae ellipticae 22–25 mm. longae ca. 13 mm. latae obtusae basi rotundatae dense pilis brevibus incurvo-pilosulae; drupa ellipsoidea 2 cm. longa obtusa glabra.—Guatemala: Dept. Huehuetenango: Between Ixcán and Río Ixcán, alt. 150–200 meters, July 23, 1942, *Julian A. Steyermark* 49270 (type in Herb. Field Mus.).

Only two other species are found in northern Central America. *M. retusa* differs in having glabrous or nearly glabrous leaves and bracts. *M. Lindavii* Rusby is even more abundantly pubescent than *M. guatemalensis*, with long spreading hairs on the pedicels, and the

bractlets are oblong-lanceolate, about 3.5 cm. long, and acuminate. Three other species known from southern Central America are all easily distinct from this new Guatemalan plant.

Poikilacanthus setiferus Standl. & Steyerm., sp. nov.—Herba 60–90 cm. alta ramosa, dense pilis longis patentibus plurilocularibus villoso-hirsutis, internodiis plerumque brevibus; folia petiolata membranacea integra, petiolo 1–2.5 cm. longo hirsuto; lamina ovata vel oblongo-ovata 4–9.5 cm. longa 2–4 cm. lata acuminata, acumine ipso obtuso, basi rotundata usque subacuta non decurrens, supra viridis sparse setoso-hirsuta, cystolithis crebris conspicuis, subtus pallidior ubique dense pilis longissimis patentibus rigidiusculis hirsuta, nervis lateralibus utroque latere ca. 7; flores subcapitati, capitulis terminalibus singulis, pedunculo gracili 6–15 mm. longo dense hirsuto; bracteae extimae foliis consimiles sed parvis 2 cm. longae vel breviores, interioribus oblanceolatis vel lanceolato-linearibus calyce paullo longioribus dense hirsutis; calyx ca. 6 mm. longus, segmentis anguste lanceolatis attenuato-acuminatis hirtellis; corolla purpurea ca. 5.5 cm. longa extus sparse villosa, tubo superne sensim ampliato fauce 5–7 mm. lato, labio posteriore ca. 3 cm. longo 1 cm. lato apice brevissime bilobo, labio inferiore paullo breviore; stamina corollam aequantia; antherae loculi ca. 2 mm. longi.—Guatemala: Dept. Alta Verapaz: Between Chamá and Cobán, alt. 900 meters, August 15, 1920, *Harry Johnson* 523 (type in Herb. Field Mus.). Dept. Huehuetenango: Cerro Chiblac, between Ixcán and Finca San Rafael, Sierra de los Cuchumatanes, 1,800 meters, July, 1942, *Steyermark* 49453.

Poikilacanthus is a small genus of large plants with exceptionally beautiful flowers. Eight species have been listed, of which only one has been reported from Central America, *P. macranthus* Lindau, which ranges from Guatemala to Nicaragua and Costa Rica. It occurs in the forests of Alta Verapaz, where the type of the present plant was collected. In *P. macranthus*, a rather frequent plant of the wet Guatemalan mountains, the corolla is about 7.5 cm. long, and the pubescence of the lower leaf surface consists of very short and inconspicuous, appressed or curved hairs. In *P. setiferus* the hairs are so long that when the leaf is pressed and dried they extend almost halfway from one lateral nerve to another. The second collection cited is practically sterile, but it has the characteristic pubescence of the type, which we have observed in no other Guatemalan plant of this family.

RUBIACEAE

Stomandra Standl., gen. nov.—Arbores puberulae vel fere glabrae, ramulis subteretibus; stipulae ut videtur caducae, non visae; folia majuscula opposita crasse membranacea petiolata oblonga vel elliptico-oblonga abrupte acuminata; flores parvi albi pentameri bracteolati sessiles vel subsessiles in paniculas amplas multifloras oppositiramosas dispositi; hypanthium obovoideum glabrum; calyx brevis subpatens ciliolatus obscure brevissime depresso-lobulatus persistens; corolla hypocrateriformis parva in alabastro apice rotundata extus glabra, tubo brevi campanulato intus glabro, lobis tubo subaequilongis patentibus, in alabastro valvatis, ovato-oblongis apicem obtusum versus angustatis intus glabris; stamina basi tubi inserta, filamentis crassiusculis basi paullo incrassatis et pilosulis; antherae basifixae erectae oblongae subexsertae apice rotundatae vel subemarginatae, poro magno terminali dehiscentes; discus tumidus obscure 5-angulatus; ovarium 2-loculare, stylo crassiusculo antheris longiore apice rotundato vel subclavato; ovula in loculis numerosa; fructus sine dubio capsularis, non visus.

Stomandra costaricensis Standl., sp. nov.—Arbor 12-metralis, ramis in sicco fuscescentibus fere teretibus, novellis minutissime puberulis vel fere glabris, internodiis brevibus; folia petiolata in sicco fuscescentia, petiolo crassiusculo 1.5–2.5 cm. longo minute puberulo vel glabrato; lamina ovali-oblonga vel elliptico-oblonga 17–20 cm. longa 7–8.5 cm. lata, breviter cuspidato-acuminata, acumine ipso obtuso, basi obtusa vel subacuta, utrinque glabra vel glabrata, supra sublucida, costa nervisque manifestis sed non elevatis, subtus fere concolor, brunnescenti-fuscescens, costa tenera prominente, nervis lateralibus utroque latere ca. 16 gracillimis angulo lato interdum fere recto divergentibus marginem versus sursum curvatis, venis inconspicuis laxe reticulatis; panicula ca. 3.5 cm. longe pedunculata magna 20 cm. longa 14 cm. lata, ramis plus minusve compressis minute puberulis, primariis oppositis, floribus singulis vel cymulosis sessilibus vel subsessilibus; bracteae et bracteolae late triangulares vel triangulari-ovatae, primariae usque ad 5 mm. longae, bracteis superioribus bracteolisque vix ultra 1 mm. longae, puberulae vel glabratae; hypanthium glabrum 1.8 mm. longum basi paullo angustatum; calyx vix 0.5 mm. altus, lobis saepe vix manifestis; corolla 3 mm. longa, tubo lobis subaequilongo, lobis ad margines subincrassatis apice subcucullatis; antherae fere toto longitudine exsertae 2 mm. longae, connectivo crassiusculo, poris apicalibus magnis.—

Costa Rica: Basin of El General, Prov. San José, alt. 675–900 meters, March, 1940, *Alexander F. Skutch* 4777 (type in Herb. Field Mus.).

It is no pleasure to name a new genus in the Rubiaceae, in which the number of recognized groups is already embarrassingly large, but the possible combinations of generic characters seem to be almost limitless. The present plant in general appearance suggests the genera *Holtonia* and *Elaeagia* of the tribe Rondeletieae, but this resemblance seems to be purely accidental, for its true place is apparently in the Condamineae, to none of whose few genera can it be referred comfortably. Because of the erect anthers, opening by apical pores, its true relationship is probably with *Rustia*. That genus differs markedly in its large flowers whose corollas have an elongate tube much longer than the lobes.

Coussarea mediocris Standl. & Steyerm., sp. nov.—Arbuscula 6–7.5 m. alta, ramis teretibus ut videtur viridibus glabris vel obscure pulverulentis; stipulae ca. 3 mm. altae latissimae intrapetiolares et connatae, apice lato brevissime bilobae persistentes; folia firme membranacea plus minusve lucida graciliter petiolata, petiolo glabro 1.5–2 cm. longo; lamina elliptico-oblonga vel lanceolato-oblonga 9–14.5 cm. longa 3.5–4.5 cm. lata subabrupte longiacuminata, basi acuta, glabra, costa gracili subtus elevata, nervis lateralibus utroque latere ca. 6 arcuato-adscendentibus, venis prominulis laxe reticulatis; inflorescentia terminalis cymoso-paniculata crasse 1.5–3 cm. longe pedunculata, 3–4 cm. longa et aequilata, e basi trichotoma, ramis crassis teretibus glabris, floribus ad apices ramulorum dense aggregatis sessilibus; hypanthium glabrum campanulatum fere 1.5 mm. altum basi rotundatum; calyx vix 0.5 mm. altus viridescens, obscure undulato-dentatus, dentibus multo latioribus quam longis; corolla alba 2.5 cm. longa extus glabra, tubo basi ca. 2 mm. lato dein subangustato, superne paullo dilatato, apice 3 mm. lato, lobis linearioblongis 7–8 mm. longis obtusis; antherae subexsertae lineares acutae 4 mm. longae.—Guatemala: Dept. Huehuetenango: Forested ravine, vicinity of Maxbal, about 17 miles north of Barillas, Sierra de los Cuchumatanes, alt. 1,500 meters, July 15, 1942, *Julian A. Steyermark* 48732 (type in Herb. Field Mus.).

In most respects this is similar to *C. mexicana* Standl. of Oaxaca, but that has much shorter petioles, smaller corollas, and a somewhat differently arranged inflorescence. The only other species known from Guatemala is *C. impetiolaris* Donn. Smith, in which the leaves are sessile or nearly so.

Hoffmannia huehueteca Standl. & Steyerm., sp. nov.—Frutex 1.5 m. altus vel humilior, interdum 30 cm. tantum altus, vulgo simplex, caule crasso subtereti ferrugineo densissime breviter ferrugineo-villosulo, internodiis plerumque brevibus; stipulae inconspicuae triangulari-acuminatae ca. 3 mm. longae ferrugineo-villosulae; folia petiolata herbacea, petiolo crasso usque ad 2 cm. longo, saepe fere nullo, villosulo; lamina oblanceolata vel obovato-oblonga 10–20 cm. longa 2–7.5 cm. lata, breviter cuspidato-acuminata, acumine obtuso, basin versus longe sensim attenuata, vulgo fere ad basin petioli decurrens, supra viridis glabra, nervis inconspicuis vix elevatis, subtus pallidior viridis in sicco brunnescens ad costam nervosque densissime et brevissime ferrugineo-villosula vel pilosula, inter nervos minute puberula, costa crassiuscula prominente, nervis lateralibus manifestis gracilibus utroque latere ca. 12 angulo lato divergentibus arcuatis; flores in axillis foliorum densissime aggregati numerosi cymulosi, cymulis sessilibus vel brevissime pedunculatis, sessiles vel breviter pedicellati; hypanthium villosulum vel fere glabrum ovale ca. 2 mm. longum; calycis lobi anguste triangulares vel anguste oblongi ca. 2 mm. longi obtusi vel acuti villosuli vel fere glabri; corolla non visa; bacca rubra subovalis glabra vel glabrata in sicco 3.5–4 mm. longa; semina numerosa minuta.—Guatemala: Dept. Huehuetenango (Sierra de los Cuchumatanes): Cerro Negro, 2 miles east of Las Palmas, alt. 1,600–2,000 meters, August 31, 1942, *Julian A. Steyermark* 51697 (type in Herb. Field Mus.); vicinity of Maxbal, 1,500 meters, *Steyermark* 48841, 48720; Cerro Huitz, between Barillas and Mimanhuitz, 1,600–2,600 meters, *Steyermark* 48538. Dept. El Progreso: Sierra de las Minas, Volcán de Santa Luisa, 2,400–3,300 meters, *Steyermark* 43508.

An exceptionally well-marked species for this genus, distinguished by the abundant ferruginous pubescence, narrow leaves long-attenuate at the base, and very dense clusters of flowers.

Hoffmannia racemifera Standl. & Steyerm., sp. nov.—Frutex simplex vel ramosus omnino glaber, ramis gracilibus, vetustioribus ochraceis, internodiis brevibus; stipulae inconspicuae deltoideae acutae vix ultra 1.5 mm. longae; folia graciliter petiolata tenuiter membranacea, petiolo 1.5–4.5 cm. longo; lamina elliptica vel ovato-elliptica 10–16 cm. longa 4–7.5 cm. lata acuminata vel longe cuspidato-acuminata, basi obtusa vel acuta non vel vix decurrens, subtus paullulo pallidior, nervis lateralibus utroque latere ca. 8 teneris prominulis angulo lato arcuato-adscendentibus; inflorescentiae axillares racemosae simplices secundae graciliter longipedunculatae

pauciflorae laxae petiolis vulgo longiores, pedicellis gracillimis 4–6 mm. longis; hypanthium obovoideo-turbinatum 1.5 mm. longum basi acutum glabrum; calycis lobi vix 0.5 mm. longi triangulares acuti erecti; corolla in alabastro juvenili tantum visa glabra apicem obtusum versus paullo angustata; bacca globoso-ovalis alba in sicco ca. 4 mm. longa.—Guatemala: Dept. Izabal: Cerro San Gil, dense wet forest, alt. 300–900 meters, December 25, 1941, *Julian A. Steyermark* 41910 (type in Herb. Field Mus.); also no. 41991, at about 1,200 meters.

The type is said to have been taken from a tree of 7.5 meters, but the senior author believes that this size is the result of a lapse in memory, since such dimensions are unknown in other species of the genus, all of which are low, simple or sparsely branched shrubs, seldom attaining a height of 3 meters. The second collection is an entire plant with roots and was less than a meter high. This species is most noteworthy because of the slender, long-pedunculate, racemose and secund, few-flowered inflorescences.

Hoffmannia Tuerckheimii Donn. Smith, var. **glabra** Standl. & Steyerm., var. nov.—A typo recedit foliis subtus omnino glabris; caules glabri; corolla extus sparse ferrugineo-villosa.—Guatemala: Dept. El Progreso: Sierra de las Minas, Montaña Canahui, between Finca San Miguel and summit of mountain, alt. 1,600–2,300 meters, February 10, 1942, *Julian A. Steyermark* 43806 (type in Herb. Field Mus.).

The typical form of *H. Tuerckheimii* has abundantly villous leaves and stems. While the difference in pubescence makes the two forms very unlike in general appearance, it is not believed that the one here named is more than a variety.

Hoffmannia quadrifolia Standl. & Steyerm., sp. nov.—Frutex gracillimus laxe ramosus 1–2.5 m. altus, ramis pallidis vel ochraceis obscure tetragonis vel subteretibus fere glabris, novellis sparse pilis brevibus subcurvis pilosulis, internodiis plerumque brevibus; folia parva tenuiter membranacea petiolata, pro magna parte quaternata, pro parte opposita, petiolo gracili 2–8 mm. longo glabro vel ciliato; lamina oblongo-elliptica vel elliptico-oblanceolata 2–5 cm. longa 8–15 mm. lata obtuse acuta vel acuminata, basi longi-attenuata et interdum fere ad basin petioli decurrens, glabra, ciliata, supra intense viridis in sicco fuscescens, nervis obsoletis, subtus multo pallidior, costa tenera inconspicua, nervis lateralibus utroque latere ca. 4 obscuris, lamina utrinque sat dense cystolithis

parvis pallidis linearibus conspersa vel cystolithis in foliis vetustioribus saepe obsoletis; flores axillares solitarii, pedicellis 2–3 mm. longis; hypanthium glabrum anguste turbinatum 2 mm. longum; calycis lobi lanceolato-subulati acuminati vix ultra 0.5 mm. longi erecti; corolla viridescenti-alba glabra in alabastro 6 mm. longa apicem obtusum versus paullo angustata, tubo anguste obconico; bacca rubra ovalis in sicco 3 mm. tantum longa glabra.—Guatemala: Dept. Zacapa: Sierra de las Minas, slopes of Monte Virgen, around summit of mountain, alt. about 2,400 meters, January 12–13, 1942, *Julian A. Steyermark* 42600 (type in Herb. Field Mus.).

This plant is noteworthy for its very small, largely quaternate or sometimes ternate leaves, and for the 1-flowered axillary inflorescences. Verticillate leaves are not unknown in this genus, but they are most unusual, at least among Central American species.

Hoffmannia vulcanicola Standl. & Steyerm., sp. nov.—Frutex 2–3-metralis omnino glaber, ramis gracillimis teretibus, internodiis elongatis; stipulae fere ad lineam reductae, parte libera caduca; folia membranacea longipetiolata opposita, petiolo gracillimo 2–3 cm. longo; lamina elliptico-lanceolata usque elliptica vulgo 12–15 cm. longa atque 4.5–7 cm. lata, anguste longiacuminata, basi acuta vel obtusa non vel vix decurrens, supra in sicco fuscescens, subtus pallidior, nervis lateralibus utroque latere ca. 11 tenerrimis prominulis angulo lato arcuato-adscendentibus, venis obsoletis; inflorescentiae axillares singulae vel 2–3-nae graciliter usque ad 3 cm. longe pedunculatae laxe cymosae vel cymoso-paniculatae vulgo pauciflorae, pedicellis gracillimis 3–7 mm. longis; hypanthium anguste clavatum 1.5 mm. longum glabrum; calyx vix 0.4 mm. altus, dentibus minutis triangularibus subacutis; corolla pallide lutea extus glabra 8 mm. longa in alabastro fere linearis et acuta vel acuminata, fere ad basin 5-loba, segmentis lanceolato-oblongis acutis, tubo brevissimo; bacca ovalis in sicco 5 mm. longa.—Guatemala: Dept. Sololá: Southern slopes of Volcán de Atitlán, above Finca Mocá, alt. 1,000–1,250 meters, June 20, 1942, *Julian A. Steyermark* 47931 (type in Herb. Field Mus.). Dept. San Marcos: Slopes of Volcán de Tajumulco, above Finca El Porvenir, 1,400–1,700 meters, March, 1940, *Steyermark* 37258.

A plant of ordinary appearance for the genus, and without any conspicuous distinguishing characters (as usually is the case in *Hoffmannia*). Related to *H. Conzattii* Standl., of Guatemala and southern Mexico, but in that the tube of the corolla is about as long as the lobes.

Palicourea phanerandra Standl. & Steyerm., sp. nov.—Arbuscula 4.5–6 m. alta omnino glabra, ramis subteretibus, vetustioribus ochraceis, internodiis brevibus vel elongatis; stipulae fere minutae vix 1 mm. longae apice minute bidentatae; folia inter minora rigide membranacea breviter petiolata sublucida, petiolo 2–3 mm. longo; lamina lanceolato-oblonga vel elliptico-oblonga 6–10 cm. longa 2–4 cm. lata longe cuspidato-acuminata vel sensim attenuato-acuminata, base acuta, in sicco fuscescens, costa venisque supra prominentibus, subtus fere concolor, costa tenera elevata, nervis lateralibus utroque latere ca. 6 arcuatis angulo semirecto adscendentibus, prominentibus, venis prominulis reticulatis; inflorescentiae terminales graciliter 2–3 cm. longe pedunculatae corymbiformes pauciflorae vix ultra 2 cm. longae et paullo latiores, sublaxae, floribus rigide pedicellatis vel alaribus sessilibus, pedicellis arcuatis vix ultra 2 mm. longis; hypanthium ca. 0.6 mm. longum crasse columnare, calyce 0.5 mm. longo, dentibus late triangularibus subacutis; corolla alba extus glabra ca. 15 mm. longa, tubo crassiusculo basi subobliquo superne vix dilatato, lobis oblongis obtusis 4–5 mm. longis patentibus vel subrecurvis intus glabris; stamina longiexserta, filamentis 3.5 mm. tubo corollae longioribus, antheris linearibus 2.5 mm. longis.—Guatemala: Dept. Izabal: Cerro San Gil, uppermost ridges and summit, alt. about 1,200 meters, December 26–27, 1941, *Julian A. Steyermark* 41952 (type in Herb. Field Mus.).

This is a plant with no outstanding characters except the much exserted stamens, a condition seldom found in this or related genera. The species is of somewhat uncertain position, and could be referred quite as well to *Psychotria*, except that the general appearance and the long corollas are more suggestive of *Palicourea*.

Psychotria lilacina Standl. & Steyerm., sp. nov.—Frutex dense ramosus 1–1.5 m. altus, ramis glabris, vetustioribus crassiusculis teretibus, internodiis brevibus; stipulae in vaginam vix 0.6 mm. altam connatae, vagina dentibus 2 vix 0.5 mm. longis acutis onusta; folia parva petiolata membranacea in sicco fuscescentia, petiolo 2–5 mm. longo glabro; lamina oblongo-elliptica usque obovato-oblonga 2–5.5 cm. longa 0.7–2.2 cm. lata, breviter obtuso-acuminata vel obtusa, basi obtusa usque acuminata, glabra, subtus paullo pallidior, nervis utrinque obscuris, lateralibus utroque latere ca. 6 arcuatis; inflorescentiae terminales corymbiformes vel umbelliformes plerumque 3–5-florae breviter pedunculatae, pedicellis crassiusculis 1–3 mm. longis glabris; hypanthium glabrum columnare ca. 0.8 mm. longum; calyx ca. 3–3.5 mm. longus glaber fere ad basin 5-lobatus, segmentis

lanceolatis adscendentibus vel superne subrecurvis attenuato-acuminatis vel interdum obtusis; corolla lilacina extus glabra ca. 8 mm. longa, tubo crasso cylindraceo, lobis brevibus ovalibus.—Guatemala: Dept. Huehuetenango: Cerro Huitz, between Mimanhuitz and Yulhuitz, Sierra de los Cuchumatanes, alt. 1,500–2,600 meters, July 14, 1942, *Julian A. Steyermark* 48564 (type in Herb. Field Mus.); Cerro Cananá, between Nucapuxlac and Cananá, Sierra de los Cuchumatanes, 2,500–2,800 meters, *Steyermark* 49107.

A plant of the cloud forest of the high mountains. Well marked among Central American species by the small leaves, deeply lobate calyx, few-flowered inflorescences, and rather large corollas.

Psychotria minarum Standl. & Steyerm., sp. nov.—Frutex ramosus 30–90 cm. altus, ramis subteretibus puberulis vel glabratis, internodiis brevibus, vetustioribus sordido-ochraceis; stipulae in vaginam brevissimam truncatam connatae, vagina dentibus 2 triangularibus acutis vix 0.5 mm. longis remotis onusta; folia parva breviter petiolata membranacea in sicco fuscescentia, petiolo gracili 4–6 mm. longo glabro vel puberulo; lamina elliptica, ovato-elliptica vel oblongo-elliptica 3–6.5 cm. longa 1–2.7 cm. lata, acuta vel acuminata, apice ipso saepe obtuso, basi acuta vel obtusa, supra glabra, subtus pallidior glabra vel praesertim ad costam nervosque scaberula, nervis lateralibus utroque latere 5–6 inconspicuis arcuato-adscendentibus, venis obsoletis; inflorescentiae terminales usque ad 1 cm. longe pedunculatae corymbiformes vulgo 3–5-florae interdum e basi trichotomae glabrae vel glabratae foliis multo breviores, floribus sessilibus vel breviter crasse pedicellatis; hypanthium obconicum 1.2 mm. longum glabrum; calyx vix 0.5 mm. longus, dentibus triangularibus acutis; fructus 4.5–5 mm. longus, pyrenis (una saepe abortiente) dorso obtuse costatis.—Guatemala: Dept. El Progreso (Sierra de las Minas): Between Calera and summit of Volcán Siglo, alt. 2,000–3,000 meters, growing in colonies in shade of trees and shrubs near the summit, January 21, 1942, *Julian A. Steyermark* 43106 (type in Herb. Field Mus.); hills north of Finca Piamonte, Volcán Santa Luisa, 2,400–3,000 meters, common ground cover in cloud forest, *Steyermark* 43492. Dept. Zacapa (Sierra de las Minas): Between Loma El Picacho and Cerro de Monos, 2,000–2,600 meters, *Steyermark* 42809; vicinity of Finca Planados, 2,500 meters, *Steyermark* 29961.

In general appearance this is much like *P. lilacina*, described above, but the calyces of the two species are very different. The corolla of *P. minarum* is unknown.

Rondeletia chinajensis Standl. & Steyerm., sp. nov.—Arbuscula 6–9-metralis, ramis subteretibus gracilibus minute puberulis; stipulae deltoideae persistentes adpressae puberulae 1.5 mm. longae acutae vel subobtusae; folia petiolata coriacea sublucida, petiolo 8–12 mm. longo crassiusculo puberulo; lamina elliptico-oblonga, rarius oblonga vel ovali-ovata, 3.5–6.5 cm. longa 1.8–3 cm. lata, apice obtusa vel anguste rotundata, basi obtusa vel subacuta, supra glabra, subtus fere concolor in sicco brunnescens, in axillis nervorum interdum breviter barbata, aliter glabra vel glabrata, nervis lateralibus utroque latere 4–5 inconspicuis; inflorescentiae terminales sessiles vel breviter pedunculatae pauciflorae cymoso-capituliformes, floribus sessilibus vel subsessilibus; hypanthium ca. 1.5 mm. longum densissime albo-pubescens; calycis lobi 5 lineares vel anguste spathulato-lineares plerumque 4.5–5.5 mm. longi acuti vel subacuti, inferne sparse puberuli vel fere glabri viridescentes, interdum cum aliis multo brevioribus et angustioribus alternantes; corólla alba extus sat dense pilis albis patentibus vel subadpressis hispidula, tubo 14–16 mm. longo cylindraceo vel superne paullo dilatato, lobis 4 patentibus ovalibus vel obovato-ovalibus 6–8 mm. longis apice rotundatis intus subdense puberulis, fauce non barbata; capsula (imperfecta) globosa 4.5 mm. diam.—Guatemala: Dept. Alta Verapaz: On knife edge of limestone ridge, Cerro Chinajá, between Finca Yalpemech and Chinajá, alt. 150–700 meters, April 1–2, 1942, *Julian A. Steyermark* 45637 (type in Herb. Field Mus.).

A species of ambiguous affinities, noteworthy for its very obtuse, coriaceous, small leaves and dense head-like inflorescences.

Rondeletia macrocalyx Standl. & Steyerm., sp. nov.—Arbuscula 6–7.5 m. alta, ramis gracilibus, vetustioribus ferrugineis, novellis dense pilis longis rigidiusculis patentibus sordidis hirsutis, internodiis terminalibus brevibus vel brevissimis; folia majuscula breviter graciliter petiolata tenuiter membranacea, petiolo 6–12 mm. longo hirsuto; lamina elliptica vel ovata 9–17 cm. longa 4–7 cm. lata breviter acuminata vel cuspidato-acuminata, basi obtusa usque attenuato-cuneata, utrinque sat dense pilis longis patentibus hirsuta, nervis lateralibus utroque latere ca. 7 tenerrimis arcuato-adscendentibus; inflorescentiae axillares vel subterminales cymosae plerumque 3-florae interdum usque 9-florae foliis duplo breviores longipedunculatae, pedunculo gracillimo hirsuto 3–5.5 cm. longo, floribus breviter vel longiuscule pedicellatis; hypanthium turbinatum dense longeque hirsutum; calycis lobi 4 anguste lanceolati subaequales ca. 15 mm. longi longiattenuati foliacei utrinque dense hirsuti; corolla alba extus

dense pilis longis adscendentibus vel patulis sordidis hirsuta, tubo gracili 18–25 mm. longo cylindraceo, lobis 4 patentibus obovato-ovalibus 7–8 mm. longis apice late rotundatis intus glabris, fauce non barbata; capsula immatura oblongo-ovoidea 9 mm. longa 5 mm. lata dense hirsuta; semina numerosissima minuta angulata.—Guatemala: Dept. Izabal: Wet forested slopes, alt. 300–900 meters, Cerro San Gil, December 25, 1941, *Julian A. Steyermark* 41864 (type in Herb. Field Mus.).

This is similar to *R. Mexiae* Standl., of Oaxaca, but in that the calyx is much smaller and the pubescence consists of much less conspicuous, much shorter hairs.

VALERIANACEAE

Valeriana delicata Standl. & Steyerm., sp. nov.—Herba parva laxa simplex erecta vel adscendens 4–10 cm. alta perennis, e rhizomate gracili repente nascens, caule sparse pilis albis patentibus vel subreflexis piloso foliato; folia caulina vulgo 3 paria 3–15 mm. longe petiolata plerumque 5-foliolata, rhachi brevi vix alata pilosula; foliola inaequalia, infima parva vulgo 3–5 mm. longa, superiora elliptica vel oblongo-elliptica sessilia plerumque 9–12 mm. longa obtusa grosse crenata, dentibus utroque latere 2–3, foliolo terminali elliptico, cuneato-elliptico vel obovato 12–20 mm. longo 8–12 mm. lato, crenato vel subtrilobo, basi cuneato petiolulato; foliola omnia tenuia pilis patentibus vel saepius subadpressis rectis pilosa; inflorescentiae terminales singulae corymbosae sed fere capituliformes dense multiflorae vix ad 8 mm. latae basi foliaceo-bracteatae, ramis brevissimis sparse pilosulis; flores albi, corolla minuta vix 1 mm. lata, tubo fere nullo, lobis brevissimis.—Guatemala: Dept. Huehuetenango: Cumbre Papal, on south-facing slopes between Cuilco and Ixmoquí, alt. 1,400–3,000 meters, August 19, 1942, *Julian A. Steyermark* 50936 (type in Herb. Field Mus.).

A dwarf and delicate plant, but otherwise with few distinguishing characters; not referable to any Mexican species of which we have seen any representation. The plants have every appearance of having attained their normal size, and do not appear to be depauperate plants of some normally large one.

COMPOSITAE

Cacalia pudica Standl. & Steyerm., sp. nov.—Herba erecta perennis 18–30 cm. alta, rhizomate brevi crasso radices numerosas

crassas carnoso-fibrosas emittente, caule simplici scapiformi; folia fere omnia radicalia, petiolo gracili 6–14 cm. longo laxe sparseque villoso vel glabrato; lamina membranacea orbicularis 4–5 cm. lata prope mediam peltata, breviter 7-loba, vel lobis interdum fere obsoletis, supra intense viridis glabra, subtus pallidior glabra vel sparse laxeque villosula et saepe glandulifera, lobis brevissimis late rotundatis apiculatis, vulgo plus minusve 3-nerviis; folium caulinum vulgo singulum, alio reducto infra capitulum interdum addito, profundius lobatum, lobis late triangularibus acutis; pedunculus apice incrassatus, bracteis paucis sparsis linearibus vel subulatis onustus; capitulum nutans, involucro 10–12 mm. alto 2–2.5 cm. lato; phyllaria 10–12 subbiseriata lanceolato-oblonga usque late ovata, intense purpurea, acuta vel obtusa, subaequalia vel exteriora angustiora et paullo breviora, ciliolata, sparse prope basin villosa vel glabra; flores disci numerosi, corollis intense purpureis 6.5 mm. longis glabris, dentibus fauce multo brevioribus; achaenia glabra, pappi setis fere albis 6–7 mm. longis.—Guatemala: Dept. Huehuetenango (Sierra de los Cuchumatanes): Alpine areas in vicinity of Tunimá, alt. 3,400–3,500 meters, July 7, 1942, *Julian A. Steyermark* 48344 (type in Herb. Field Mus.); near Chémal, 3,700 meters, August 9, 1942, *Steyermark* 50329.

The plant is a very distinct one, different in several respects from all other species of Mexico and Central America. It is noteworthy especially for its solitary nodding heads and distinctly 2-seriate phyllaries. It could almost be taken as the type of a distinct genus, but it is inadvisable to add any further genera to this tribe in which generic characters are so notoriously poor, *Cacalia* itself being dubiously distinct from *Senecio.*

Calea crassifolia Standl. & Steyerm., sp. nov.—Frutex ramosus 1.5–2.5 m. altus, ramis crassis teretibus densissime pilis brevibus patentibus plerumque brunnescentibus hispidulis, internodiis brevibus; folia opposita sessilia vel brevissime crasseque petiolata coriacea vel subcoriacea, rigida, late ovata vel saepius latissime deltoideo-ovata vel rotundo-ovata 5–7 cm. longa 3.5–6 cm. lata, apice obtusa vel subrotundata, basi breviter cordata usque rotundata, supra viridia densissime scabra tactu asperrima, subtus paullo pallidiora, ubique dense pilis brevibus patentibus asperulis hispidula, grosse crenato-serrata, dentibus mucronatis, e basi trinervia, venis subtus insigniter prominentibus et laxe reticulatis; capitula majuscula lutea ad apices ramorum densissime capitato-aggregata sessilia pauca ca. 8 mm. alta et aequilata; phyllaria exteriora herbacea viridia oblonga

vel lanceolato-oblonga acuta vel subacuta interioribus aequilonga vulgo plus minusve patentia dense hispidula ciliata, interioribus stramineis oblongis obtusis vel subacutis ciliatis glabris vel glabratis; corolla 4–4.5 mm. longa extus glabra, tubo abrupte in faucem aequilongum expanso; achaenia angusta angulata 2.6 mm. longa sparse pubescentia; pappi squamae vulgo 5 ca. 4 mm. longa straminea profunde in lobos setaceos longiattenuatos dissectae.—Guatemala: Dept. Alta Verapaz: Along knife-edge of limestone ridge, Cerro Chinajá, between Finca Yalpemech and Chinajá, above source of Río San Diego, alt. 150–700 meters, April 1–2, 1942, *Julian A. Steyermark* 45627 (type in Herb. Field Mus.).

Marked by the rather large, broad, rigid-coriaceous, very obtuse or rounded, sessile leaves, and the large heads with foliaceous outer phyllaries. The arrangement of the heads, densely capitate and sessile at the ends of the branches, is a most distinctive character if it is normal and constant, which may not be the case.

Calea savannarum Standl. & Steyerm., sp. nov.—Herba erecta perennis gracillima simplex vel sparse supra ramosa 90 cm. alta vel humilior, caule dense pilis albidis patentibus laxis villoso-piloso, internodiis vulgo foliis longioribus; folia opposita parva membranacea sessilia vel subsessilia triangulari-ovata vel oblongo-triangularia 1.5–3 cm. longa 7–16 mm. lata apicem obtusum versus sensim angustata, basi breviter cordata vel truncata, breviter crenata vel undulato-crenata, supra viridia, subtus paullo pallidiora, utrinque pilis albis pluriloculariibus villoso-pilosa, trinervia vel paullo supra basin triplinervia; capitula parva lutea ad apicem rami singula vel 2–3, pedunculis gracillimis 4–7 cm. longis; discus ca. 5 mm. altus et 4–5 mm. latus; phyllaria pauca subuniseriata late ovata obtusa 2.3 mm. longa sparse strigillosa vel glabrata; paleae albidae tenues 3 mm. longae oblanceolatae obtusae; corolla fere 2 mm. longa, tubo brevi, fauce longo sensim dilatato; radii pauci, ligulis latis luteis 2.5 mm. longis; achaenia valde immatura ut videtur glabra, pappo coroniformi e squamis minutis vix manifestis composito.—Guatemala: Dept. Izabal: In savanna between Milla 49.5 and Cristina, alt. about 70 meters, April 3, 1940, *Julian A. Steyermark* 38658 (type in Herb. Field Mus.).

All the heads of the none too ample type specimen are so young that it is difficult to determine exactly the characters of the achene and pappus. In general appearance the plant is very similar to *C. multiradiata* Seaton, of Mexico, to which it was first referred. That

differs, however, in its acutely serrate leaves of rather different outline, and in its larger heads with numerous purplish rays.

Cirsium nigriceps Standl. & Steyerm., sp. nov.—Herba erecta alta, caule superne 1 cm. crasso exalato superne sat dense laxe arachnoideo-tomentoso, tomento albescente vel brunnescente, internodiis superioribus brevibus; folia caulina sessilia et basi lata amplexicaulia, ambitu lineari-oblonga ca. 17 cm. longa et 3.5 cm. lata supra viridia viscido-villosula vel puberula vel glabrata, subtus pallide viridia, ad costam nervosque laxe arachnoideo-tomentosa, aliter glabra vel glabrata, auriculis magnis valde dilatatis non decurrentibus; lamina profunde pinnatifida saepe fere ad costam lobata, lobis 15-jugis vel paucioribus triangularibus vel triangulari-lanceolatis saepe trilobis vel grosse spinoso-serratis, apice seta straminea gracili sed rigida usque ad 7 mm. longa terminatis, acutis vel acuminatis; capitula ad apices ramulorum sessilia vel subsessilia dense aggregata, paniculam foliatam sparse ramosam 22 cm. longam atque 12 cm. latam efformantia, basi bracteis paucis inconspicuis angustis profunde spinoso-lobulatis involucrata; involucrum late campanulatum vel hemisphaericum in sicco nigrescens ca. 2 cm. altum et aequilatum; phyllaria numerosissima gradata adpressa lanceolato-linearia usque ad 1.3 mm. lata longiattenuata apice seta erecta rigida pallida vix 2 mm. longa terminata, fere omnino glabra minute ciliolata eglandulosa; corolla purpurea extus glabra, tubo fere filiformi ca. 12 mm. longo, fauce brevi paullo ampliato, lobis linearibus patentibus ca. 3.5 mm. longis; achaenia subcompressa glabra cuneato-oblonga 4 mm. longa; pappi setae plumosae sordidae ca. 1.5 cm. longae.—Guatemala: Dept. Huehuetenango: Between Tojquiá and Caxín bluff, summit of Sierra de los Cuchumatanes, alt. about 3,700 meters, August 6, 1942, *Julian A. Steyermark* 50157 (type in Herb. Field Mus.).

A rather well-marked species of no obvious affinities, not closely related to any of those known hitherto from Central America.

Eupatorium montigenum Standl. & Steyerm., sp. nov.—Frutex vel arbuscula 3–6-metralis, ramis densissime pilis brunnescentibus vel sordidis patentibus villoso-pilosis teretibus, internodiis brevibus; folia graciliter petiolata tenuiter membranacea opposita, petiolo 1.5–3.5 cm. longo ut ramis induto; lamina oblongo-elliptica vel elliptico-ovata 11–17 cm. longa 5–8 cm. lata acuta vel acuminata, basi obtusa, adpresse inconspicue praesertim apicem versus serratodentata vel fere integra, supra viridis puberula et ad nervos costam-

que villosula, subtus paullo pallidior ubique sat dense villoso-pilosula vel subtomentosa, penninervia, nervis lateralibus utroque latere ca. 5 arcuatis irregularibus, epunctata, venis pellucidis; inflorescentia terminalis corymboso-paniculata rotundata, capitulis numerosis albis cymulosis, vulgo graciliter pedicellatis, pedicellis plerumque 4–7 mm. longis densissime pilis mollibus patentibus pilosulis; capitula bene evoluta non visa, involucro 5–6 mm. alto campanulato sat dense adpresso-pilosulo; phyllaria inaequalia gradata ca. 3-seriata saltem exteriora rubro tinctis, extimis brevibus ovatis obtusis vel subacutis, intimis oblongis apice obtusis vel rotundatis; flores ca. 10, corolla 4 mm. longa, tubo gracillimo cylindraceo glabro; pappi setae albae 2.5 mm. longae.—Guatemala: Dept. El Progreso: Hills north of Finca Piamonte, on slopes toward summit of Volcán de Santa Luisa, Sierra de las Minas, alt. 2,400–3,000 meters, February 5, 1942, *Julian A. Steyermark* 43532 (type in Herb. Field Mus.). Dept. Jalapa: Forested slopes of quebrada, Montaña Miramundo, near Miramundo, 2,000 meters, December, 1939, *Steyermark* 32836.

A plant of somewhat ambiguous affinities, belonging to the group of species with pellucid-veined leaves but not closely related to any other Guatemalan species of that group. Both collections are in bud and the mature heads may be somewhat larger than described here.

Hieracium clivorum Standl. & Steyerm., sp. nov.—Herba perennis erecta vel adscendens, rhizomate brevi crasso radices numerosas crassiusculas emittente; scapus gracillimus 14–27 cm. longus vulgo monocephalus, interdum superne geniculatus et gemmis 1–2 onustus, nudus vel prope basin folio singulo parvo onustus, prope basin pilis perpaucis longis patentibus indutus, superne glaber vel glabratus, infra capitulum pilis brevibus fulvescentibus puberulus vel pilosulus; folia radicalia numerosa 3.5–6.5 cm. petiolo incluso longa 8–10 mm. lata crassiuscule petiolata, obtusa vel subacuta, nigro-apiculata, utroque latere dentibus paucis repandis nigrescentibus remotis onusta, supra viridia glabra, subtus glaucescentia pallida pilis paucis longis mollibus ad costam nervosque et ad margines conspersa; bracteae lineares vel fere filiformes usque ad 8 mm. longis semper paucae atque inconspicuae; involucrum campanulatum 8–10 mm. altum sat dense pilis brevibus viscidis subadpressis pilosulum, phyllariis ca. 12 lineari-lanceolatis attenuatis; capitula alba fere 2 cm. lata ca. 1.5 cm. alta; pappus fulvescens; achaenia glabra fuscescentia.—Guatemala: Dept. Huehuetenango: On high bluffs in upper reaches of barranco, above San Juan Ixcoy, Sierra de los

Cuchumatanes, alt. 2,400 meters, August 4, 1942, *Julian A. Steyermark* 50065 (type in Herb. Field Mus.).

This may be no more than a form of *H. Skutchii* Blake, of the same general region, but that is a much stouter plant with larger, bright yellow heads, the conspicuous and abundant pubescence of the involucres and peduncles composed in part of very coarse, long, spreading, blackish hairs. Although the four plants of the type sheet of *H. clivorum* have each a single head, it is suspected, because of the presence of sterile buds, that the plant sometimes produces more than a single head on each scape.

Mikania concinna Standl. & Steyerm., sp. nov.—Herba scandens glabra, caulibus atropurpureis subteretibus, internodiis elongatis; folia inter minora longipetiolata subcoriacea plus minusve lucida, petiolo gracili 1–2.5 cm. longo; lamina late deltoideo-ovata vel rotundo-ovata 2.5–5.5 cm. longa 2–4.5 cm. lata acuta vel acuminata, basi late cordata vel subtruncata, supra viridis, nervis prominulis, venis obsoletis, subtus pallidior obscure punticulata, e basi 5-nervia, venis obsoletis, margine fere integro sed vulgo utroque latere dentibus ca. 3 repandis minutis onusto; capitula pauca in statu fructifero 12 mm. longa sessilia vel subsessilia, bracteis ovatis vel ellipticis acutis ciliolatis involucro brevioribus; phyllaria purpureo tincta 7–8 mm. longa glabra vel glabrata ciliata oblonga vel late oblonga apice obtusa et apiculata in sicco sordido-brunnea costato-nervosa; corolla glabra pappo brevior; achaenia prismatica 4.5–5 mm. longa sordido-olivacea glabra, pappi setis brunnescentibus 5 mm. longis.—Guatemala: Dept. Zacapa: Sierra de las Minas, climbing over steep mossy banks, middle and upper, southern slopes of Volcán Gemelos, alt. about 3,000 meters, January 26, 1942, *Julian A. Steyermark* 43292 (type in Herb. Field Mus.).

A well-marked species, outstanding because of its small and very broad, subcoriaceous leaves in which the veins are invisible. The inflorescences are small, dense, and mostly 2.5–3.5 cm. broad.

Mikania huitzensis Standl. & Steyerm., sp. nov.—Herba scandens, caulibus obscure hexagonis vel subteretibus glabris vel tantum ad nodos sparse puberulis, internodiis elongatis; folia inter minora graciliter petiolata membranacea, petiolo ca. 2 cm. longo glabro; lamina ovata ca. 4.5 cm. longa et 2.8 cm. lata acuminata vel acuta, basi subcordata vel late rotundata integra vel remote minute repando-denticulata, glabra, supra viridis, subtus paullo pallidior e basi 5-nervia, venis subtus manifestis; capitula numerosa alba in

statu fructifero 12 mm. longa dense cymoso-corymbosa, corymbis foliatis 4–7 cm. latis, capitulis plerumque breviter pedicellatis, bracteis spathulatis usque ellipticis vel ovatis obtusis vel subrotundatis capitula interdum aequantibus; phyllaria 8 mm. longa glabra prope apicem ciliata acuta vel subacuta viridia in sicco brunnescentia pappo paullo breviora; corolla pappi setas subaequans glabra, lobis oblongo-linearibus tubum fere aequantibus; achaenia immatura 3.5 mm. longa pallida sparse puberula vel glabra, pappi setis 5–6 mm. longis sordido-albidis.—Guatemala: Dept. Huehuetenango: Sierra de los Cuchumatanes, Cerro Huitz, between Mimanhuitz and Yulhuitz, alt. 1,500–2,600 meters, July 14, 1942, *Julian A. Steyermark* 48662 (type in Herb. Field Mus.).

Evidently allied to *M. tacanensis* Standl. & Steyerm., of Guatemala, but in that species the leaves are conspicuously undulate-dentate or repand and the bracts subtending the heads are smaller, mostly lanceolate or oblong-lanceolate, and acute or acuminate.

Mikania petrina Standl. & Steyerm., sp. nov.—Herba scandens, caulibus obscure hexagonis vel subteretibus dense brunneo-pilosulis, internodiis elongatis; folia inter minora longipetiolata membranacea in sicco fuscescentia, petiolo 2–3 cm. longo sordide brunneo-pilosulo; lamina ovata vel oblongo-ovata ca. 6 cm. longa et 3.5 cm. lata vel saepe minor, acuminata, basi truncata, subarcte serrato-dentata, utrinque scabra vel scaberula tactu aspera, subtus in statu juvenili brunneo-pilosa, e basi 5-nervia, venis subtus manifestis; capitula in statu fructifero 13 mm. longa numerosa cymoso-corymbosa sessilia dense aggregata, corymbis rotundatis ca. 5.5 cm. latis foliis reductis onustis, bracteis lanceolatis vel oblongo-lanceolatis involucro brevioribus acutis vel acuminatis; phyllaria ca. 7 mm. longa viridia in sicco sordido-brunnea anguste lanceolato-oblonga acuta vel abrupte acuta, dense brunneo-pilosula vel interdum glabrata; corolla glabra pappi setis paullo brevior; achaenia anguste prismatica pallide olivacea glabra vel sparsissime puberula 5 mm. longa, pappi setis fulvescentibus 6–7 mm. longis minute scaberulis.—Guatemala: Dept. Sololá: In wet cloud forest near the summit of Volcán de San Pedro, northern slopes toward Lago de Atitlán, above San Pedro, alt. 2,500–2,800 meters, June 7, 1942, *Julian A. Steyermark* 47257 (type in Herb. Field Mus.).

A species of ordinary appearance, somewhat related to *M. tacanensis* and *M. huitzensis*, but differing from both in its abundant dirty-brown pubescence.

Siegesbeckia nudicaulis Standl. & Steyerm., sp. nov.—Herba erecta perennis 20–30 cm. alta e radice crassa suberecta vel repente nascens, caule singulo inferne simplici 1–3-cephalo nudo vel tantum foliis 2 bracteiformibus oppositis ca. 2 cm. longis onusto, pedunculis gracilibus 8–16 cm. longis basi bracteis 2 foliaceis oblongis vel lanceolato-oblongis 1.5–2.5 cm. longis sustentis, caule purpurascente sat dense pilis brevibus glanduliferis patentibus piloso, pedunculis densius pilis purpurascentibus vel nigrescentibus glanduloso-pilosis; folia radicalia ca. 8 petiolo incluso 5–8 cm. longa 2–4 cm. lata; lamina late ovata, rhombeo-ovata vel elliptica apice obtusa vel subrotundata, basi rotundata vel subacuta et saepius abrupte in petiolum lamina breviorem late alatum contracta, undulato-serrata vel subintegra, bene supra basin trinervia, supra sat dense villosa, subtus pallidior glabra vel glabrata; capitula lutea radiis expansis 2–2.5 cm. lata; phyllaria exteriora ca. 8 late linearia 6–8 mm. longa basin versus angustata foliacea densissime glanduloso-pilosula apice rotundata vel subtruncata, patentia vel reflexa; phyllaria interiora obovato-oblonga 3–4 mm. longa obtusa extus glanduloso-pubescentia erecta; corolla 2 mm. longa, tubo pubescente fere filiformi limbo paullo breviore, limbo campanulato, lobis ciliolatis obtusis; radii lamina oblonga vel elliptica 5–10 mm. longa; achaenia irregularia nigrescentia obovoidea vel turbinata 2 mm. longa glabra sublucida apice truncata.—Guatemala: Dept. Huehuetenango: Sierra de los Cuchumatanes, above San Juan Ixcoy, along trail to Tojquiá, alt. 2,800–3,400 meters, August 5, 1942, *Julian A. Steyermark* 50114 (type in Herb. Field Mus.).

From continental North America only two other species of the genus are known, *S. repens* Rob. & Greenm., of Oaxaca, which we have not seen, evidently distinct from the Guatemalan plant, and the common and widespread *S. triangularis* Cav., of which *S. jorullensis* HBK. is a synonym. That is an altogether different plant, with leafy stems and very numerous, much smaller heads with relatively much more elongate outer phyllaries. The Guatemalan species is the only American plant of the genus that we have seen that appeared really different from *S. triangularis*. We are aware of the fact that the generic name appeared originally as *Sigesbeckia*, but since it was intended to honor a man whose name was written consistently as Siegesbeck, it seems rather silly to use the original spelling, which must have been the result of a slip of the pen.

Verbesina calciphila Standl. & Steyerm., sp. nov.—Frutex ca. 1.5 m. altus ramosus, ramis gracilibus, novellis dense scabro-

hispidulis, internodiis brevibus; folia alterna brevissime petiolata herbacea, petiolo nudo vix ultra 3 mm. longo; lamina oblanceolata vel oblongo-oblanceolata 9–11.5 cm. longa 2–4 cm. lata acuminata, basi longe sensim cuneato-attenuata, remote inconspicue repando-serrulata, supra viridis dense scabra, pilis basi incrassatis, subtus pallidior ad nervos venasque hispidula inter venas glabra; capitula pauca laxe corymboso-paniculata graciliter 2–4.5 cm. longe pedicellata, disco ad anthesin ca. 1 cm. alta et aequilata, in statu fructifero paullo majore; phyllaria inaequalia laxe imbricata vel plus minusve patentia herbacea oblonga vel oblanceolato-oblonga, interiora ca. 1 cm. longa vel paullo ultra, exteriora breviora, obtusa vel acuta scabra vel adpresso-hispidula; paleae rigidae 6–7 mm. longae lanceolato-oblongae acutae glabrae; radii lamina oblongo-linearis 10–14 mm. longa lutea; achaenia immatura cuneato-oblonga 3 mm. longa glabra ut videtur anguste alata strigoso-ciliata, pappi setis ca. 4 mm. longis erectis antrorse scaberulis.—Guatemala: Dept. Huehuetenango: Sierra de los Cuchumatanes, between Tojquiá and Caxín bluff, alt. 3,700 meters, a shrub hanging from a limestone bluff, August 6, 1942, *Julian A. Steyermark* 50132 (type in Herb. Field Mus.); above San Juan Ixcoy, upper forest above Yulhuitz, 2,400 meters, August 4, 1942, *Steyermark* 50080.

Among Central American species this plant has no close relatives, nor does it agree with any of the shrubby species reported from Mexico. In foliage it suggests the Guatemalan *V. pleistocephala* Donn. Smith, which has much smaller heads with short rays.

Verbesina minarum Standl. & Steyerm., sp. nov.—Frutex vel arbuscula 2.5–4.5 m. alta ut videtur dense ramosa, ramis crassiusculis subteretibus, novellis dense pallido-strigulosis, vetustioribus brunnescentibus, internodiis brevibus; folia alterna breviter petiolata subcoriacea, petiolo crasso usque ad 13 mm. longo minute puberulo vel strigilloso; lamina oblanceolata vel oblongo-oblanceolata 4.5–11 cm. longa 1–4 cm. lata obtusa vel acuta basin versus longe sensim angustata, integra vel prope apicem pauciserrata, supra viridis glabra, nervis pallidis manifestis, subtus pallida, glabra vel minute et inconspicue strigillosa, costa crassiuscula prominula, nervis lateralibus utroque latere 7–8 inconspicuis arcuatis irregularibus, venis obsoletis; inflorescentia terminalis corymbosa dense multicapitata vulgo 3–6 cm. lata foliis brevior, capitulis albis usque ad 12 mm. longe pedicellatis vel fere sessilibus, campanulatis in statu florifero ca. 7 mm. longis basi obtusis; involucrum 4–4.5 mm. altum, phyllariis viridescentibus graduatis imbricatis, exterioribus oblongo-

ovatis, interioribus oblongis, omnibus obtusis vel subacutis minute sparse puberulis; corollae 3.5 mm. longae prope basin puberulae, tubo basi fere filiformi subito in faucem cylindraceum ampliato, lobis brevissimis; paleae lineari-oblongae 4 mm. longae pallidae membranaceae obtusae; achaenia immatura compressa glabra obscure ciliata, pappi setis 1.2–2 mm. longis erectis.—Guatemala: Dept. Zacapa (Sierra de las Minas): Río Repollal, upper slopes to summit of the mountain, alt. 2,100–2,400 meters, January 12–13, 1942, *Julian A. Steyermark* 42489 (type in Herb. Field Mus.); also no. 42516. Dept. El Progreso (Sierra de las Minas): Between Calera and summit of Volcán Siglo, 2,000–3,000 meters, January 21, 1942, *Steyermark* 43030.

An isolated species, not closely related to any other of which we have seen material. It is marked by its woody branches, small coriaceous glabrous leaves, minute pubescence of the stems, and small white discoid heads.

Vernonia mima Standl. & Steyerm., sp. nov.—Frutex erectus 2–3-metralis, ramis brunnescentibus subtortuosis, novellis dense pilis sordidis pilosis vel subtomentosis; folia longiuscule petiolata membranacea, petiolo crassiusculo 1.5–3 cm. longo dense tomentoso; lamina late ovata vel elliptico-ovata 7–12.5 cm. longa 5–8 cm. lata acuta, basi rotundata vel obtusa, interdum abrupte contracta et breviter decurrens, subintegra, supra sparse puberula vel glabrata, subtus vix pallidior, minute puncticulata, laxe subtomentosa vel breviter pilosula, penninervia, nervis lateralibus utroque latere 6–8 prominentibus gracilibus arcuatis, venis prominulis laxe reticulatis; capitula alba dense cymulosa sessilia vel subsessilia turbinato-campanulata numerosissima, cymulis paniculam magnam ovoideam foliatam 20–30 cm. longam efformantibus, ramis dense tomentulosis vel sordido-pilosulis; involucrum 8 mm. altum; phyllaria 4–5-seriata gradata viridescentia pallida glabra vel glabrata, exteriora triangulari-ovata acuta interdum tomentulosa, interiora oblongo-linearia obtusa pappi setas aequantia; flores ca. 10; achaenia immatura turbinata brunnea glabra 1.3 mm. longa, basi calloso-incrassata, pappi setis albis 4.5 mm. longis deciduis.—Guatemala: Dept. Huehuetenango: Damp hillside thicket, near crossing of Río San Juan Ixtán, east of San Rafael Pétzal, alt. about 1,730 meters, January 9, 1941, *Paul C. Standley* 82871 (type in Herb. Field Mus.). Dept. Quezaltenango: Volcán de Santa María, above Santa María de Jesús, 1,500–3,000 meters, January, 1940, *Steyermark* 33990.

This seems to be related most closely to *V. oaxacana* Schultz. Bip. of Mexico, which we know only by a photograph of the type. That species is reported by Blake from both Oaxaca and Chiapas, and might well be expected to occur in Quezaltenango and Huehuetenango. According to the type photograph, however, it is a plant in which the leaves have narrow bases, and all or most of the heads are on long slender pedicels. In general appearance this new species is much like *V. leiocarpa* DC., a common shrub of Guatemala, belonging to the group treated as a separate genus *Eremosis*, by some authors. In that genus the flowers are less numerous, generally only 1–6 in a head.

NOTES

Erechtites agrestis (Swartz) Standl. & Steyerm., comb. nov. *Sonchus agrestis* Swartz, Prodr. Veg. Ind. Occ. 110. 1788.

Rumfordia Standleyi (Steyerm.) Standl. & Steyerm., comb. nov. *Polymnia Standleyi* Steyermark, Field Mus. Bot. 23: 106. 1944.

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